

LEWIS'

DICTIONARY OF

OCCUPATIONAL *and*  
ENVIRONMENTAL SAFETY  
*and* HEALTH

Jeffrey W. Vincoli

Vincoli, Jeffrey W. "Frontmatter"

*Lewis' Dictionary of Occupational and Environmental Safety and Health*

Edited by Jeffrey W. Vincoli

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# Preface

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The occupational and environmental safety and health professions have been on merging paths for several years now. Corporate "down-sizing" or "right-sizing" has resulted in a more streamlined approach to these once very diverse and quite separate disciplines. Although they both may now be practiced in tandem, often by the same individuals, each has evolved and developed as a separate area of study. As such, there are literally thousands of words, terms, and phrases that have specific meanings within their respective disciplines that may not always be clear and simple.

The practicing professional who has responsibilities in both occupational *and* environmental safety and health must be familiar with the "language of the profession" to successfully maneuver through the maze of compliance, regulatory, management, administrative, legal, technical, scientific, and even industry-specific slang terminology that are encountered every working day.

The *Lewis Dictionary of Occupational and Environmental Safety and Health* is the most comprehensive reference source of its kind available to today's diversified professional. Words, terms, and phrases from the following specific areas have been included in this publication. In total, there are approximately 25,000 definitions from the various listed areas of study.

Anatomy and Anthropometrics	Industrial Security
Accident Investigation and Prevention	Industrial Toxicology
Aviation and Aerospace Safety	Inspections and Audits
Biological and Medical Waste Management	Insurance and Loss Control
Biology and Microbiology	Internet
Biostatistics	Law and Litigation
Chemistry	Manufacturing
Clean Air Act	National Institute for Occupational Safety and Health
Clean Water Act	Occupational Medicine
Collective Bargaining and Union Agreements	Occupational Safety and Health Act
Computing and Computer Science	Occupational Safety and Health Administration Terms
Ecology	Occupational Safety and Health Review Commission
Emergency/Disaster Preparedness and Response	Pollution Prevention Act
Epidemiology	Product Liability
Environmental Compliance	Public Health
Environmental Protection Agency Terms	Regulations and Standards
Environmental Sanitation and Pollution Control	Risk Management
Ergonomics	Robotics
Expert Witnessing	Safety and Health Training
Fire Protection and Prevention	Safety Engineering
Fire Science and Fire Engineering	Safety Management and Administration
Geology and Hydrogeology	Site Assessments and Audits
Hazardous Waste Management	Superfund (CERCLA)
Healthcare	System Safety Engineering
Health Physics (Radiation)	Transportation (Air, Road, Rail, Water)
Human Resources and Labor Management	Wet Lands Management
Industrial Hygiene and Occupational Health	Workers' Compensation

Occupational and environmental safety and health disciplines are, indeed, separate functions. However, changes in the way corporate America does business has forced a continued divergence of the two professions. Those stuck in the middle, the practicing safety and environmental professionals, are forced to

contend with an increasing number of responsibilities in areas where they may only possess cursory knowledge. This development has created a drastic need for new, quick-reference sources of knowledge and information. The more complete and comprehensive the source, the more beneficial it will be to the user.

This *Lewis Dictionary of Occupational and Environmental Safety and Health* is an attempt to fill this need and provide the professional with the single-source of reference for defining the thousands of words, terms, and phrases they are faced with literally every working day.

*Jeffrey W. Vincoli*  
*Editor*





## THE EDITOR

**Jeffrey W. Vincoli, CSP, CHCM** has worked in the field of occupational safety and environmental health for more than eighteen years. This experience has included the development, implementation, administration, and management of occupational and environmental safety and health programs for a number of Fortune 500 companies. Currently, Mr. Vincoli is President and Principal Consultant of J.W. Vincoli & Associates specializing in providing occupational safety and environmental training and consulting services to a number of domestic and international clients.

Mr. Vincoli has provided safety, health, and environmental training and management consulting services for literally thousands of professionals across the United States and in more than 15 countries. He also specializes in providing expert testimony on matters of fact pertaining to occupational safety, health, and the environment. His consulting practice has extended across a wide range of industries including aerospace and aviation, military, mass transit, nuclear, chemical, manufacturing, and many others. This experience has led to an appreciation for the specialized terminology that seems to be somewhat unique to the various industries. This appreciation has subsequently resulted in the compilation of the *Lewis Dictionary of Occupational and Environmental Safety and Health*.

Prior to beginning his own consulting practice, Mr. Vincoli spent 14 years working in our nation's missile, space, and strategic defense programs. With more than 10 years working for the former McDonnell Douglas Corporation (now Boeing), he worked first as a Safety Engineer and then as Manager of occupational safety and health, system safety engineering, industrial hygiene, hazardous waste management, and environmental compliance programs. Mr. Vincoli has worked on such programs as the Space Shuttle, Space Station, unmanned launch vehicle operations, Tomahawk Cruise Missile, and other specialized weapon systems for the United States and allied governments. Mr. Vincoli also worked for companies such as EG&G, Inc., and United Technologies Corporation, always with a focus on ensuring a safe and healthy work environment for several thousand employees.

Mr. Vincoli received his undergraduate degrees from the Florida Institute of Technology and completed his Master of Science and Master of Business Administration from Embry-Riddle Aeronautical University. He is a Certified Safety Professional, a Certified Hazard Control Manager, and a Registered Environmental Professional.

Mr. Vincoli is a member of many recognized organizations, including the American Society of Safety Engineers, the System Safety Society, the National Environmental Health Association, and the Veterans of Safety. He has published more than two dozen articles in professional trade journals such as *Professional Safety*, *Occupational Health and Safety*, *Hazard Prevention*, *Green Cross* (Hong Kong), and *Noticias de Seguridad* (Mexico). The *Lewis Dictionary of Occupational and Environmental Safety and Health*, his second work for Lewis Publishers, is his seventh published text in the field of safety, health, and the environment. He has served on the Editorial Board for *Occupational Hazards* magazine (1995-1998) and on the Advisory Committee for the Bureau of Business Practice (1995-1997).

Mr. Vincoli is an active member of the American Society of Safety Engineers. He has held office on the Chapter level, including President, and has served on numerous Regional and National Committees and Special Task Force assignments focusing on the Society's service to its members and to the safety profession. He has re-

ceived numerous awards from professional societies, including the System Safety Society's Manager of the Year (1994) and the American Society of Safety Engineer's Regional Safety Professional of the Year (1987 and 1993). In 1998, he received the Charles V. Culbertson Outstanding Volunteer Service Award from the American Society of Safety Engineers for his contributions to the Society and its members.

Mr. Vincoli is a noted speaker, lecturer, trainer, and published author on subjects that extend across the broad scope of the occupational safety, health, and environmental industries.

# Acknowledgments

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This work was developed with the help of a number of organizations, contributors, and specialists representing the various areas of study that are of interest to the practicing safety and environmental professional. Specifically, I am particularly grateful to the following individuals/organizations and/or quoted sources for their contributions without which this publication would not have been possible:

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Federal Railroad Administration  
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National Institute for Occupational Safety and Health  
Occupational Safety and Health Administration  
United States Air Force  
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Finally, I would like to thank the many professionals at Lewis Publishers who have made the publication of this text as painless as possible. Specifically, I am grateful to Kenneth P. McCombs, Bob Hauserman, Suzanne Lassandro, and Mimi Williams for their efforts in making this publication a reality.

*It is appropriate that I dedicate this "book of terms" to the two people who taught me the meaning of some of the most important things in life long before I could even read.*

*To my mother, Carmela Vincoli,*

*whose courageous battle against cancer is an inspiration to all who know her.*

*To my father, Joseph Vincoli,*

*a lifelong example of dependability and support, always putting the interests of others before his own.*

Vincoli, Jeffrey W. "A-D"

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# A

## **A1 carcinogen**

A confirmed human carcinogen as classified by the ACGIH TLV Committee. Substances associated with industrial processes, recognized to have carcinogenic potential.

## **A2 carcinogen**

A suspected human carcinogen as classified by the ACGIH TLV Committee. Chemical substances, or substances associated with industrial processes, which are suspect of inducing cancer, based on either limited epidemiological evidence or demonstration of carcinogenesis on one or more animal species by appropriate methods.

## **"A" basis allowables**

The minimum mechanical strength values guaranteed by the material producers or suppliers such that at least 99 percent of the material they produce or supply will meet or exceed the specified values with a 95 percent confidence level.

## **AAEE**

American Academy of Environmental Engineers.

## **AAI**

See *arrival aircraft interval*.

## **AAIH**

See *American Academy of Industrial Hygiene*.

## **AALACS**

See *ambient aquatic life advisory concentrations*.

## **AAOHN**

See *American Association of Occupational Health Nurses*.

## **AAOO**

American Academy of Ophthalmology and Otolaryngology.

## **AAP**

See *acoustical assurance period*.

## **AAQS**

Ambient air quality standards.

## **AAR**

See *airport acceptance rate*.

## **AAS**

See *atomic absorption spectroscopy*.

## **ABIH**

See *American Board of Industrial Hygiene*.

## **abs**

Absolute.

## **A-scale sound pressure level**

A measurement of sound approximating the sensitivity of the human ear, used to note the intensity or annoyance of sounds.

## **A-shift**

See *first shift*.

## **A-weighted network**

Weighing network that is present on sound level meters and octave band analyzers which mimics the human ear's response to sound. Represented as dB(A).

## **abaft**

A point beyond the midpoint of a ship's length.

## **abandon**

*Law.* To desert, surrender, forsake, or cede. To relinquish or give up with intent of never resuming one's right or interest. To cease to use. To give up absolutely; to forsake entirely; to renounce utterly; to relinquish all connection with or concern in; to desert. It includes the intention, and also the external act by which it is carried into effect.

## **abandoned property**

*Law.* Property over which the owner has given up dominion and control with no intention of recovering it. See also *abandonment*.

## **abandoned runway**

An airstrip that is intact but not maintained or intended for use as a runway.

## **abandoned well**

A well whose use has been permanently discontinued or which is in a state of disrepair such that it cannot be used for its intended purpose.

## **abandonee**

*Law.* A party to whom a right or property is abandoned or relinquished by another. Term is applied to the insurers of vessels and cargoes.

**abandonment**

*Law.* The surrender, relinquishment, disclaimer, or cession of property or of rights. Voluntary relinquishment of all right, title, claim, and possession, with the intention of not reclaiming it. Time is not an essential element of act, although the lapse of time may be evidence of an intention to abandon, and where it is accompanied by acts manifesting such an intention, it may be considered in determining whether there has been an abandonment. Abandonment differs from *surrender* in that the latter requires an agreement, and also from *forfeiture* in that forfeiture may be against the intention of the party alleged to have forfeited.

**ab assuetis non fit injuria**

*Law* (Latin). From things to which one is accustomed (or in which there has been long acquiescence) no legal injury or wrong arises. In other words, if a person neglects to insist on his/her right, he/she is deemed to have abandoned it.

**abatable nuisance**

*Law.* A nuisance which is practically susceptible of being suppressed, or extinguished, or rendered harmless, and whose continued existence is not authorized under the law.

**abate**

*Law.* To throw down, to beat down, destroy, quash. To do away with, nullify, lessen, or diminish.

**abatement**

(1) *Air Pollution.* The reduction in the intensity or concentration of an ambient air pollutant. (2) *Asbestos.* Control of the release of fibers from a source of asbestos-containing materials during removal, enclosure, or encapsulation. (3) *General.* The removal or elimination of a nuisance; the actions taken to effect same; reducing the degree or intensity of, or eliminating, pollution. (4) *Law.* A reduction, a decrease, or a diminution. The suspension or cessation, in whole or in part, of a continuing charge, such as rent.

**abatement in action**

*Law.* An entire overthrow or destruction of the suit so that it is quashed and ended.

**abator**

*Law.* (1) In real property law, a stranger who, having no right of entry, contrives to get pos-

session of an estate of freehold, to the prejudice of the heir or devisee, before the latter can enter, after the ancestor's death. (2) In the law of torts, one who abates, prostrates, or destroys a nuisance.

**abbreviated injury scale (AIS)**

An integer scale developed by the Association for the Advancement of Automotive Medicine to rate the severity of individual injuries. A numerical rating system used in an attempt to quantify an automobile accident victim's severity of injuries, as follows:

Rating	Severity
1	minor
2	moderate
3	serious
4	severe
5	critical (survival uncertain)
6	maximum (virtually unsurvivable)
9	unknown

**abbreviated instrument flight rules (IFR) flight plans**

*Federal Aviation Administration.* An authorization by Air Traffic Control (ATC) requiring pilots to submit only that information needed for the purpose of ATC. It includes only a small portion of the usual Instrument Flight Rules (IFR) flight plan information. In certain instances, this may be only aircraft identification, location, and pilot request. Other information may be requested if needed by ATC for separation/control purposes. It is frequently used by aircraft which are airborne and desire an instrument approach or by aircraft which are on the ground and desire a climb to Visual Flight Rule (VFR)-on-top.

**ABC test**

Unemployment compensation law exclusion tests providing that employer is not covered if individuals he/she employs are free from his/her control, the services are performed outside employer's places of business, and employees are customarily engaged in independently established trades or professions.

**ABC transaction**

In mining and oil drilling operations, a transfer by which A, the owner, conveys the working interest to B, the operator and developer for cash consideration, reserving a pro-



duction payment usually larger than the cash consideration paid by B. Later, A sells the reserved production payment to C for cash. The tax advantages of this type of transaction were eliminated by the Tax Reform Act of 1969.

**abdication**

Renunciation of the privileges and prerogatives of an office. It differs from *resignation*, in that resignation is made by one who has received his/her office from another and restores it into his/her hands, as an inferior into the hands of a superior. Abdication is the relinquishment of an office which has devolved by act of law.

**abdomen**

That part of the human body which lies between the thorax and the pelvis, containing the stomach, liver, spleen, pancreas, kidneys, bladder, and intestines.

**abdominal cavity**

That cavity within the abdomen which contains such organs as the intestines, liver, and bladder.

**abdominal circumference**

The surface distance measure of the lower torso at the level of the maximum anterior protrusion of the abdomen. It is measured with the individual sitting erect.

**abdominal depth, standing**

The horizontal linear distance from the back to the front of the abdomen, at the level of the maximum anterior protrusion. Measured with the individual standing erect; note the level at which the measurement is taken.

**abdominal extension circumference**

See *abdominal circumference*.

**abdominal extension depth**

See *abdominal depth*.

**abdominal extension height**

The vertical distance from the floor or other reference surface to the level of the maximum anterior protrusion of the abdomen in the midsagittal plane. Measurement is taken with the person standing.

**abdominal extension level**

See *abdominal extension height*.

**abdominal extension to wall**

The horizontal distance from the most laterally protruding point of the abdomen to a wall. Measured with the individual standing erect

against the wall with minimal buttock compression.

**abdominal skinfold**

The thickness of a horizontal skinfold centered at 3 cm lateral from 1 cm inferior to the umbilicus. Measured with the person standing comfortably erect, the body weight equally distributed to both feet, and the abdominal muscles relaxed.

**abdominal wall**

The covering of the abdominal cavity, consisting of fibrous and fatty tissue, muscles, and skin.

**abdominoscopy**

Examination, especially by means of an instrument, of the abdomen or its contents.

**abducens**

The sixth cranial nerve, which supplies the external rectus muscle of the eye.

**abducent muscles**

Muscles that pull back certain parts of the body from the mesial line.

**abduct**

To draw away from the main axis of the body or from a part of the body.

**abduction angle**

That angle through which a joint is abducted from a specified reference position. Also referred to as the *angle of abduction*.

**abductor**

A muscle that moves certain parts from the axis of the body.

**abeam**

*Federal Aviation Administration*. An aircraft is "abeam" a fix, point, or object when that fix, point, or object is approximately 90 degrees to the right or left of the aircraft track. Abeam indicates a general position rather than a precise point.

**Abel Test**

A colorimetric test that involves the use of moist potassium iodide paper which turns violet in the presence of gasses evolved from nitroglycerin, nitrocellulose, and nitroglycol.

**aberration**

(1) The failure of light rays to converge at a focal point in an optical system, resulting in blur. See also *spherical aberration*, *chromatic aberration*. (2) Deviation from the

right course. (3) Deviation of refracted light rays. (4) A mental disorder.

**aberrant**

(1) Straying from the usual or normal method or course of action. (2) An aberrant structure, especially in regard to variable chromosome numbers.

**abet**

*Law.* (1) To encourage, incite, or set another on to commit a crime. This word is usually applied to aiding in the commission of a crime. To abet another to commit a crime is to command, procure, counsel, encourage, induce, or assist. (2) To facilitate the commission of a crime, promote its accomplishment, or help in advancing or bringing it about. In relation to charge of aiding and abetting, term includes knowledge of the perpetrator's wrongful purpose, and encouragement, promotion, or counsel of another in the commission of the criminal offense.

**abettor**

*Law.* An instigator, or setter on; one who promotes or procures a crime to be committed. A person who, being present, incites another to commit a crime, and thus becomes a principal.

**abeyance**

*Law.* Lapse in succession during which there is no person in whom title is vested. In the law of estates, the condition of a freehold when there is no person in whom it is vested.

**abide**

To accept the consequences of; to rest satisfied with; to wait for. With reference to an order, judgment, or decree of a court, to perform or execute.

**abiding conviction**

*Law.* (1) A definite conviction of guilt derived from a thorough examination of the whole case. Used commonly to instruct juries on the frame of mind required for guilt proved beyond a reasonable doubt. (2) A settled or fixed conviction.

**ability**

Having the physical and/or mental capacity to perform a given task effectively.

**ab inconvenienti**

(Latin) *Law.* From hardship, or inconvenience. An argument founded upon the hard-

ship of the case, and the inconvenience or disastrous consequences to which a different course of reasoning would lead.

**ab initio**

(Latin) *Law.* From the beginning; from the first act; from the inception. An agreement is said to be "void ab initio" if it has at no time had any legal validity.

**abiotic**

Indicating the absence of life; non-biological.

**ablate**

To remove surgically.

**able-bodied**

Not having a physical handicap.

**ABLEDATA**

A computerized database containing consumer product information on devices for disabled individuals. Available from the National Clearinghouse on Technology and Aging.

**able to earn**

*Law.* Ability to obtain and hold employment means that the person referred to is either able or unable to perform the usual duties of whatever employment may be under consideration, in the manner that such duties are customarily performed by the average person engaged in such employment.

**abnormal reading**

See *abnormal time*.

**abnormal time**

An observed elemental time value which is beyond typical statistical or policy limits. Also referred to as *abnormal reading*.

**ABO**

See *aviator's breathing oxygen*.

**abode**

One's home; habitation; place of dwelling; or residence. Ordinarily means *domicile*.

**ABOHN**

American Board of Occupational Health Nurses, Incorporated.

**abort**

(1) *General.* Terminate some ongoing process or activity prior to its scheduled or expected completion. (2) *Federal Aviation Administration.* To terminate a preplanned aircraft maneuver (e.g., an aborted takeoff).

**above elbow (AE)**

Pertaining to an amputation at some level of the upper arm or a prosthesis which is fitted over the upper arm.

**above knee (AK)**

Pertaining to an amputation at some level of the thigh or a prosthesis which is fitted over the thigh.

**abrade**

To rub or wear down skin, primarily through friction.

**abrasion**

(1) The act of abrading. (2) An injury of the skin by abrading the outer layer. (3) Any scrapped area.

**abrasive**

A collection of discrete, solid particles that, when impinged on a surface, cleans, removes surface coatings, or improves the quality of, or otherwise prepares to modify the characteristics of that surface, either by impact or friction.

**abrasive blasting**

See *abrasive cleaning*.

**abrasive cleaning**

Process of cleaning surfaces by use of materials such as sand, alumina, steel shot, walnut shells, etc. in a stream of high pressure air or water.

**ABS**

(1) Acrylonitrile-butadiene-styrene, a black plastic material used in the manufacture of pipes and other components. (2) Alkylbenzene-sulfonate, a surfactant formerly used in synthetic detergents that resisted biological breakdown.

**abscess**

A collection of purulent matter in the tissue of a body organ or part, with pain, heat, and swelling.

**abscissa**

The horizontal or independent axis on a two-dimensional graph.

**abscond**

*Law.* To go in a clandestine manner out of the jurisdiction of the courts, or to remain concealed, in order to avoid their process. To hide, conceal, or absent oneself clandestinely,

with the intent to avoid legal process. Postponing limitations.

**absconding debtor**

*Law.* One who absconds from his/her creditors to avoid payment of debts. A debtor who has intentionally and purposely concealed himself/herself from his/her creditors, or withdrawn from the reach of their suits, with intent to frustrate their just demands.

**absent**

Not present at some location when one is normally expected to be there.

**absentee**

An individual who is not present at his/her workplace when he/she is supposed to be there.

**absolute**

(1) *General.* Perfect or pure, as absolute alcohol (ethyl alcohol containing not more than one percent by weight of water). (2) *Law.* Free from conditions, limitations, or qualifications; not dependent, modified, or affected by circumstances; that is, without any condition or restrictive provisions.

**absolute block**

*Railroads.* A block in which no train is permitted to enter while it is occupied by another train.

**absolute deed**

*Law.* A document of conveyance without restriction or defeasance; generally used in contradistinction to mortgaged deed.

**absolute humidity**

The weight of water vapor per unit volume of air (e.g., pounds per cubic foot or milligrams per cubic meter).

**absolute law**

*Law.* The true and proper law of nature, immutable in the abstract or principal, in theory, but not in application; very often the object, the reason, the situation, and other circumstances, may vary its exercise and obligation. See also *natural law*.

**absolute liability**

*Law.* Responsibility without fault or negligence.

**absolute maximum**

The highest value anywhere on the total extent of a curve. See also *relative minimum*.

**absolute pitch**

A skill or ability of a person to identify the pitch of a pure tone without the use of any external reference.

**absolute pressure**

Pressure measured with respect to zero pressure or a vacuum. It is equal to the sum of a pressure gauge reading and the atmospheric pressure at the measurement location.

**absolute purity water**

Water with a specific resistance of 18.3 megohms cm at 25°C.

**absolute scale**

A temperature scale based on absolute zero. See also *Kelvin scale*.

**absolute temperature**

Temperature based on an absolute scale expressed in either degrees Kelvin or degrees Rankine corresponding, respectively, to the centigrade or Fahrenheit scales. Degrees Kelvin are obtained by adding 273 to the centigrade temperature or subtracting the centigrade temperature from 273 if below zero C. Degrees Rankine are obtained by algebraically adding the Fahrenheit reading to 460. Zero degrees K is equal to -273°C and zero R is equal to -459.69°F.

**absolute threshold**

That minimum stimulus intensity which represents the transition between a response and no response from an observer attending to a particular sensory/perceptual task under specified conditions. Also referred to as *lower threshold*. See also *threshold*, and *threshold of audibility*.

**absolute vorticity**

See *vorticity*.

**absolute zero**

The minimum point in the thermodynamic temperature scale, expressed as zero degrees Kelvin, -273.16 degrees centigrade, -459.69 degrees Fahrenheit, or zero Rankine. This is a hypothetical temperature at which there is a total absence of heat.

**absolutely stable air**

An atmospheric condition that exists when the environmental lapse rate is less than the moist adiabatic rate.

**absolutely unstable air**

An atmospheric condition that exists when the environmental lapse rate is greater than the dry adiabatic rate. Also referred to simply as *unstable air*.

**absorb**

The penetration of a substance into the body of another.

**absorbance**

Logarithm to the base 10 of the transmittance.

**absorbed dose**

For any ionizing radiation, the energy imparted to matter by ionizing particles per unit mass of irradiated materials at the point of exposure. See also *RAD*.

**absorbent**

A substance that takes in and absorbs other materials; a substance applied to a wound to stanch or arrest the flow of blood.

**absorbent gas mask**

Any respirator which includes a container having some type of material to absorb toxic substance.

**absorber**

(1) Any material which is capable of taking up chemicals or radiation. (2) Any device which is capable of taking up chemicals or radiation.

**absorption**

(1) *Toxicological*. The ability of a substance to penetrate the body of another; the movement of a chemical from the site of exposure (oral, dermal, respiratory) across a biologic barrier and into the bloodstream or lymphatic system. (2) *Chemistry*. The process by which one material is pulled into and retains another to form a blended or homogeneous solution. (3) *Physiology*. The process by which porous tissues such as the skin and intestine walls permit passage of liquids and gases into the bloodstream. (4) *Radiation*. The process whereby the number of particles or quanta in a beam of radiation is reduced or degraded in energy as it passes through some medium. The absorbed radiation may be transformed into mass, other radiation, or energy by interaction with the electrons or nuclei of the atoms on which it impinges. (5) *Acoustics*. The conversion of acoustical energy to heat or another form of energy within the medium of

the sound-absorbing material. (6) *Environmental*. The adhesion of molecules of gas, liquid, or dissolved solids to a surface. Used as an advanced method of treating in which activated carbon removes organic matter from wastewater. (7) *Law*. Act or process of absorbing. Term used in collective bargaining agreements to provide seniority for union members if employer's business is merged with another.

**absorption coefficient**

In acoustics, the fraction of incident sound absorbed or otherwise not reflected by a surface.

**absorptive muffler**

A type of acoustic muffler that is designed to absorb sound energy as sound waves pass through it.

**abstention doctrine**

*Law*. Permits a federal court, in the exercise of its discretion, to relinquish jurisdiction where necessary to avoid needless conflict with the administration by a state of its own affairs.

**abstract of record**

*Law*. A complete history in short, abbreviated form of the case as found in the record, complete enough to show the appellate court that the questions presented for review have been properly reserved. An abbreviated, accurate, and authentic history of proceedings.

**abut**

To reach; to touch. To touch at the end; be contiguous; join at a border or boundary; terminate on; end at; border on; reach or touch with an end. The term *abutting* implies a closer proximity than the term *adjacent*. No intervening land.

**abutting owner**

An owner of land which abuts or adjoins. The term usually implies that the relative parts actually adjoin, but is sometimes loosely used without implying more than close proximity.

**ac**

Alternating current.

**AC**

See *alcohol concentration*.

**ACAIS**

See *Air Carrier Activity Information System*.

**acantha**

The spine; one of the acute processes of the vertebrae.

**acariasis**

A skin disease caused by mites. See also *sca-bies*.

**acaricide**

Chemical used to kill ticks and mites.

**ACBM**

Asbestos-containing building material.

**ACCC**

See *area control computer complex*.

**accelerate stop distance available**

*Federal Aviation Administration*. The runway plus stopway length declared available and suitable for the acceleration and deceleration of an airplane aborting a takeoff.

**acceleration**

A vector representing the rate of change of velocity with time.

**acceleration illusion**

Any perception of apparent motion or change in motion resulting from acceleration-induced stimulation of the vestibular apparatus, the visual system, or other mechanoreceptors.

**acceleration loss**

In ventilation, the energy required to accelerate air to a higher velocity.

**acceleration power**

Measured in kilowatts. Pulse power obtainable from a battery used to accelerate a vehicle. This is based on a constant current pulse for 30 seconds at no less than 2/3 of the maximum open-circuit voltage, at 80% depth-of-discharge relative to the battery's rated capacity and at 20 degrees Celsius ambient temperature.

**acceleration syndrome**

Any change in physiological and/or perceptual-motor-cognitive function due to the forces imposed on the body by changes in velocity. Also known as *g-force syndrome*. See also *positive g*, *negative g*, and *transverse g*.

**accelerator**

A device for imparting kinetic energy to electrically charged particles such as electrons, protons, helium ions and other ions of elements of interest. Common types of accelerators include the Van der Graaf, Cockcroft-Walton, cyclotrons, betatrons, linear accelerators, and others.

**accelerometer**

A force transducer used in measuring acceleration. Also referred to as *acceleration transducer* and *acceleration pickup*.

**accelerometry**

The quantitative measurement of accelerations of a structure or its components.

**accent lighting**

Any form of directional or other unique illumination emphasis as an attempt to bring attention to a segment of the field of view or some object within the environment.

**acceptability**

With regard to the use of instruments, the willingness of personnel to use an instrument when considering its characteristics, such as weight, noise, response time, drift, portability, reliability, interference effects, etc.

**acceptable daily intake (ADI)**

An estimate similar in concept to the RfDs; however, derived using a less rigorously defined methodology. RfDs have replaced the ADI as the EPA's preferred value for use in evaluating potential non-carcinogenic health effects resulting from exposure to a chemical.

**acceptable entry conditions**

As pertains to confined space entry, the conditions that must exist in a permit space to allow entry and to ensure that employees involved with a permit-required confined space entry can safely enter into and work within the space.

**acceptable indoor air quality**

Indoor air in which there are no known contaminants at harmful levels and air with which 80% of the occupants of the indoor environment are satisfied with its quality.

**acceptable intake for chronic exposure (AICs)**

An estimate similar in concept to the RfDs; however, derived using a less rigorously defined methodology. RfDs have replaced AICs as the EPA's preferred value for use in evaluating potential non-carcinogenic health effects resulting from exposure to a chemical.

**acceptable intake for subchronic exposure (AIS)**

An estimate similar in concept to a subchronic RfDs; however, derived using a less rigorously defined methodology. Subchronic RfDs have replaced AICs as the EPA's preferred

value for use in evaluating potential non-carcinogenic health effects resulting from exposure to a chemical.

**acceptable lift**

Ninety pounds multiplied by a series of factors related to the location of the object to be lifted, its distance from a specific position, and the lift frequency.

**acceptable quality level (AQL)**

The maximum allowable average percentage of vehicles or exhaust systems that can fail sampling inspection under a Selective Enforcement Audit under Chapter I, (Environmental Protection Agency), Subchapter G (Noise Abatement Programs) of Title 40 (Protection of Environment) of the Code of Federal Regulations.

**acceptable risk**

(1) That degree of risk which society is willing to take after societal, economic, and political factors are considered. (2) The residual risk that remains after all possible control measures have been implemented that is deemed acceptable by the party or parties that are exposed to the risk (e.g., management, employees, the public, the government, etc.).

**accepted**

With regard to electrical installations, accepted means it has been inspected and found by a nationally recognized testing laboratory to conform to specified plans or to procedures of applicable codes.

**access, easement of**

*Law.* An easement of access is the right which an abutting owner has of ingress to and egress from his/her premises, in addition to the public easement in the street.

**access restrictions road gate**

Constraints on use of a road.

**access rights**

This element identifies who has acquired legal access rights over a road segment.

**access time**

That temporal interval required to gain an opening to or achieve a certain position within a given structure.

**access to counsel**

*Law.* Right of one to consult with his/her attorney as guaranteed by the 6th Amendment of the U.S. Constitution.



**accessibility**

A measure of the ease with which a location may be reached, entered, or viewed.

**accessibility score**

A rating based on the cross-sectional area of the access path available for an individual or body part to reach the desired point.

**accessible**

(1) *Equipment*. Admitting close approach. Not guarded by locked doors, elevation, or other effective means. *See also readily accessible*. (2) *Wiring Methods*. Capable of being removed or exposed without damaging the building structure or finish, or not permanently closed in by the structure or finish of the building. *See also concealed and exposed*.

**accessible environment**

The atmosphere, land surfaces, surface waters, oceans and all of the lithosphere that is beyond the controlled area, according to Chapter I, (Environmental Protection Agency), Subchapter F (Radiation Protection Programs) of Title 40 (Protection of Environment) of the Code of Federal Regulations.

**accessible stations**

A public transportation passenger facility which provides ready access, is useable, and does not have physical barriers that prohibit and/or restrict access by individuals with disabilities, including individuals who use wheelchairs.

**accessible vehicles**

Public transportation revenue vehicles which do not restrict access, are usable, and provide allocated space and/or priority seating for individuals who use wheelchairs.

**accessory**

*Criminal Law*. (1) Contributing to or aiding in the commission of a crime. One who, without being present at the commission of a felonious offense, becomes guilty of such offense, not as a chief actor, but as a participant, as by command, advice, instigation, or concealment; either *before* or *after* the fact or commission. (2) One who is not the chief actor in the offense, nor present at its performance, but is in some way concerned therein, either before or after the act committed. (3) One who aids, abets, commands, or counsels another in the commission of a

crime. *See also abet, aid, accessory after the fact, accessory before the fact, and accessory during the fact*.

**accessory after the fact**

*Law*. Any person who, knowing a felony to have been committed by another, receives, relieves, comforts, or assists the felon, in order to enable him/her to escape from punishment, or the like.

**accessory before the fact**

*Law*. One who orders, counsels, encourages, or otherwise aids and abets another to commit a felony and who is not present at the commission of the offense. The primary distinction between the *accessory before the fact* and the *principle in the second degree* is presence.

**accessory during the fact**

*Law*. A person who stands by without interfering or giving such help as may be in his/her power to prevent the commission of a criminal offense.

**accessory movement**

*See synkinesia*.

**accessory or auxiliary equipment**

A particular item of equipment added to a vehicle to aid or contribute to the vehicle's operation and/or mission.

**accident**

(1) *General*. An unplanned, unforeseen, and therefore unwanted or undesired event that may or may not result in physical harm and/or property damage; any unplanned event that interrupts or interferes with the orderly progress of a production activity or process. (2) *System Safety*. An unwanted event resulting from the occurrence of one or more fault incidents that have a negative impact on a system, product, equipment, or personnel. (3) *Worker's Compensation Law*. Any unforeseen, untoward happening which was not to be reasonably anticipated. An unlooked for and untoward event which is not expected or designed by injured employee; a result produced by a fortuitous cause. (4) *Insurance*. Includes continuous or repeated exposure to the same conditions resulting in public liability which the insured neither expected nor intended. (5) *Department of Transportation*. An occurrence involving a commercial motor vehicle operating on a public road which results in one of the following: a fatality; bodily injury to a



person, who as a result of the injury, immediately receives medical treatment away from the scene of the accident; or one or more motor vehicles incurring disabling damage as a result of the accident, requiring the vehicle to be transported away from the scene by a tow truck or other vehicle. It does not include an occurrence involving only boarding and alighting from a stationary motor vehicle; an occurrence involving only the loading or unloading of cargo; or an occurrence in the course of the operation of a passenger car or a multipurpose passenger vehicle, as defined in 49 CFR 571.3, by a motor carrier and is not transporting passengers for hire or hazardous materials of a type and quantity that require the motor vehicle to be marked or placarded in accordance with 49 CFR 177.823. (6) *American Gas Association*. (a) An event that involves the release of gas from a pipeline or of liquefied natural gas or gas from an LNG facility resulting in a death, or personal injury necessitating in-patient hospitalization; or estimated property damage, including cost of gas lost, of the operator or others, or both, of \$50,000 or more; (b) An event that results in an emergency shutdown of an LNG facility; (c) An event that is significant, in the judgment of the operator, even though it did not meet the criteria of (a) or (b). (7) *Federal Transit Association*. An incident involving a moving vehicle. Includes collisions with a vehicle, object, or person (except suicides) and derailment/left roadway. (8) *National Safety Council*. Occurrence in a sequence of events that produces unintended injury, death, or property damage. Accident refers to the event, not the result of the event. (9) *Railroad Accident/Incident*. (a) Any impact between railroad on-track equipment and an automobile, bus, truck, motorcycle, bicycle, farm vehicle, or pedestrian at a rail-highway grade crossing; (b) Any collision, derailment, fire, explosion, act of God, or other event involving operation of railroad on-track equipment (standing or moving) that results in more than \$6,300 in damages to railroad on-track equipment, signals, track, track structures, and road-bed; (c) Any event arising from the operation of a railroad which results in: i) Death of one or more persons; ii) Injury to one or more persons, other than railroad employees, that requires medical treatment; iii) Injury to one or more

employees that requires medical treatment or results in restriction of work or motion for one or more days, one or more lost work days, transfer to another job, termination of employment, or loss of consciousness; or iv) Occupational illness of a railroad employee as diagnosed by a physician. (10) *Aviation*. An aircraft accident is defined by the National Transportation Safety Board (NTSB) as an occurrence associated with the operation of an aircraft which takes place between the time any person boards the aircraft with the intention of flight until all such persons have disembarked, and in which any person suffers death or serious injury as a result of being in or upon the aircraft or by direct contact with the aircraft or anything attached thereto, or in which the aircraft receives substantial damage.

#### **accident analysis**

A concerted, organized, methodical, planned process of examination and evaluation of all evidence and records identified during investigation of accidents.

#### **accident classes**

*Transportation*. Term used to categorize commercial vehicle accidents according to accident severity (i.e., fatal accidents, injury accidents, and property damage accidents).

#### **accident consequences**

*Transportation*. The physical results of motor vehicle accidents. Consequences include fatalities, injuries, and property damage.

#### **accident frequency rate**

An older term for the number of lost time accidents per 1,000,000 man-hours worked. Also known as *frequency rate*, it is represented by the following formula:

$$AFR = \frac{\text{number of lost-time accidents}}{1,000,000 \text{ man-hours worked}}$$

#### **accident insurance**

Form of insurance which undertakes to indemnify the insured against expenses, loss of time, and suffering resulting from accidents causing him/her physical injury, usually by payment at a fixed rate per month while the consequent disability lasts, and sometimes including the payment of a fixed sum to his/her heirs in case of death by accident within the

term of the policy. *See also insurance and casualty insurance.*

#### **accident investigation**

A detailed and methodical effort to collect and interpret facts related to an individual accident, conducted to identify the causes and develop control measures to prevent recurrence; a systematic look at the nature and extent of the accident, the risks taken, and loss(es) involved; an inquiry as to how and why the accident event occurred.

#### **accident phases**

In an accident investigation, when evaluating the sequence of events that resulted in an accident, the events are divided into three phases or categories: *pre-contact* (before the accident), *contact* (the accident), and *post-contact* (after the accident). Analysis of the events occurring in each phase facilitates the identification of loss-inducing activities and conditions. Also referred to as the three stages of loss control.

#### **accident potential**

A situation comprised of human behaviors and/or physical conditions having a probability of resulting in an accident.

#### **accident prevention**

(1) Efforts or countermeasures that are taken to reduce the number and severity of accidents. (2) The design or application of countermeasures in an environment to reduce accidents or the accident potential.

#### **accident proneness**

A non-scientific determination or belief that a particular person may have a tendency toward being involved in or contributing to accidents.

#### **accident rate**

The accident experience relative to a base unit of measure (e.g., the number of disabling injuries per 1,000,000 person-hours worked). *See also accident frequency rate.*

#### **accident repeater**

A person who has been principally involved, regardless of cause, in more than one accident within a predetermined and specified period of time, for example, one year.

#### **accident risk**

A measure of vulnerability to loss, damage, or injury caused by a dangerous element or factor (MIL-STD-1574A).

#### **accident risk assessment**

A written evaluation of those hazards associated with the operation of a given facility, including any equipment or hardware used in the facility. A determination of the accident potential and an explanation of control measures are also provided.

#### **accident risk factor**

A dangerous element of a system, event, process, or activity, including causal factors such as design or programming deficiency, component malfunction, human error, or environment, which can propagate a hazard into an accident if adequate controls are not effectively applied (MIL-STD-1574A).

#### **accident severity rate**

An older term for the number of lost workdays per 1,000,000 man-hours worked. Also known as severity rate, it is represented by the following formula:

$$ASR = \frac{\text{number of lost workdays}}{1,000,000 \text{ man-hours worked}}$$

#### **accident site**

The location of an unexpected occurrence, failure, or loss, either at a plant or along a transportation route, resulting in a release of hazardous materials, property damage, personnel injury or death, or some other combination of loss events.

#### **accident sources**

Accidents generally involve one or all of five elements: people, equipment, material, procedures, and the work environment, each of which must interact for successful business operations. However, when something unplanned and undesired occurs within either of these elements, there is usually some adverse effect on any one or all of the other elements, which if allowed to continue uncorrected, could lead to an incident or accident and subsequent loss.

#### **accident type**

*Federal Highway Association.* An accident type is classified as either "collision" or "non-collision."

#### **accidental death**

A death causally related to some accident.

#### **accidental impact**

An undesired, other than functional impact. Also referred to as a *nuisance impact*.

**accidental release**

The unanticipated emission of a regulated substance or other extremely hazardous substance into ambient air from a stationary source.

**acclimatization**

An adaptive process which results in a reduction of the physiological response produced as a result of the application of a constant environmental stress, such as heat, on the body; the process of becoming accustomed to new conditions; the physiological and behavioral adjustments of an organism to changes in its environment.

**accommodation**

(1) *Physiology*. The ability of the eye to focus for varying distances; the adjustment of the eye lens whereby it is able to focus a clear image onto the retina. (2) *Law*. An arrangement or engagement made as a favor to another, not upon a consideration received. Something done to oblige, usually spoken of a loan of money or commercial paper, also a friendly agreement or composition of differences. The word implies no consideration.

**accommodation of workers**

See *worker accommodation*.

**accomplice**

*Law*. One who knowingly, voluntarily, and without common intent unites with the principal offender in the commission of a crime. One who aids and assists, or is an accessory. One is liable as an accomplice to the crime of another if he/she gave assistance or encouragement or failed to perform a legal duty to prevent it with the intent thereby to promote or facilitate commission of the crime.

**accomplice liability**

*Law*. Criminal responsibility of one who acts with another before, during, or after the perpetration of a crime.

**accord**

An agreement between two persons, one of whom has a right of action against the other, to settle the dispute.

**accouchement**

Confinement; childbirth.

**accountable**

To be called upon to account for the accomplishments or non-accomplishments relative

to an assigned function or task. Responsibility assigned by management to an individual to carry out an assignment.

**accounting changes income (loss)**

The difference between the amount of retained earnings at the beginning of the period in which a change in accounting has occurred and the amount of retained earnings that would have been reported, net of applicable taxes, at that date if the new accounting had been applied retroactively for all applicable periods.

**accounts receivable insurance**

Insurance coverage designed to protect against inability to collect because of damage to records which support the accounts.

**accredited laboratory**

Certification awarded to an analytical laboratory that has successfully participated in a proficiency testing program, such as that of the American Industrial Hygiene Association (AIHA).

**accretion**

The growth of a precipitation particle by the collision of an ice crystal or snowflake with a super-cooled liquid droplet that freezes upon impact. Also referred to as *riming*.

**accumulation start date**

That date when the first drop or piece of waste has been put into the container.

**accumulative timing**

A time-study technique in which multiple timers are used with electrical or mechanical linkage to obtain task or work cycle times. Also referred to as multiple watch timing.

**accumulator**

A tank installed in a circulating water system to allow for fluctuations in flow, temperature, pressure, or other variation in operation.

**accuracy**

The degree of agreement between a measured value and the accepted reference value, or the agreement of an instrument reading or analytical result to the true value. When referring to an instrument's accuracy it represents the ability of the device to indicate the true value of the measured quantity. For instruments, it is often expressed as a percentage of the full-scale range of the instrument.

**ACD**

Allergic contact dermatitis.

**acetabulum**

The cavity that receives the head of the thigh bone.

**acetic**

Having the properties of vinegar.

**acetic acid**

An acid, often prepared by the oxidation of alcohol, and with water forming the chief ingredient of vinegar. Acetic acid is used as a reagent and is sometimes taken internally.

**acetone**

(1). *Chemistry*. A chemical compound,  $\text{CH}_3\text{COCH}_3$ , with solvent properties and characteristic odor, obtained by fermentation or produced synthetically; it is a byproduct of acetoacetic acid. It can be produced synthetically. (2). *Physiology*. A colorless liquid found in minute amounts in the body and in larger amounts in the blood and urine in diabetes, faulty metabolism, and after lengthy fasting.

**acetylcholine**

A substance in the human body having important neurotransmitter effects on various internal systems; often used as a bronchoconstrictor.

**acetylsalicylic acid**

See *aspirin*.

**ACF**

See *area control facility*.

**acfm**

Actual cubic feet per minute.

**ACGIH**

See *American Conference of Government Industrial Hygienists*.

**achalasia**

Failure of the sphincter or other muscular valves to relax normally and allow the gastrointestinal contents to pass.

**AChe enzyme**

Acetylcholinesterase enzyme.

**achievable duty**

A term used to describe OSHA's approach to employer compliance with safety and health regulations and standards. The contention is

that compliance must be achievable within the feasible bounds of economics and technology.

**Achilles heel**

Generally refers to the point of weakness that is most vulnerable or susceptible.

**Achilles tendon**

The tendon that joins the heel bone and the muscles of the calf.

**achondroplasia**

Defective development of cartilage causing dwarfism.

**ac/hr**

Air changes per hour. The movement of a volume of air in a given time; if a room has one air change per hour, it means that all of the air in the room will be replaced in a one-hour period.

**achromatic**

Without hue (color, chroma); appearing white, black, or gray.

**achromatic lens**

A lens corrected to have the same focal length for two or more specified wavelengths.

**achromatic point**

An equal energy white point on the CIE chromatic diagram with coordinates of  $x = y = 0.33$ . Also known as *white point*.

**achromatin**

That portion of the nucleus of a cell which is not stainable.

**achromatopsia**

Complete color blindness.

**achromatous**

Having no color; of a lighter color than is usual or normal.

**ACI**

American Concrete Institute.

**acid**

A compound consisting of hydrogen plus one or more other elements and which, in the presence of certain solvents or water, reacts with the production of hydrogen ions; a compound with pH between zero and seven. As pH decreases from seven to zero, acidity increases. An acid reacts with an alkali to form a salt and water; it turns litmus paper red.

**acid-ash diet**

A special diet prescribed for the purpose of lowering the urinary pH so that alkaline salts will remain in solution. The diet may be given to aid in the elimination of fluid in certain kinds of edema, in the treatment of some types of urinary tract infection, and to inhibit the formation of alkaline urinary calculi. Meat, fish, eggs, and cereals are emphasized; fruits, vegetables, and milk may be forbidden or restricted.

**acid-base balance**

The maintenance of a normal balance between the acidity and alkalinity of the body fluids located within the extracellular and intracellular compartments. Since most of the normal metabolic processes of the body produce acids as their end products, the body must work continuously to maintain this delicate balance. Chemical buffers, principally bicarbonates, phosphates, and salts of proteins, help in the neutralization process. The kidneys and lungs also participate in this mechanism because of their control of the availability of the electrolytes that are essential to proper functioning of the buffer system.

**acid deposition**

A complex chemical and atmospheric phenomenon that occurs when emissions of sulfur and nitrogen compounds and other substances are transformed by chemical processes in the atmosphere, often far from the original sources, and then deposited on earth in either a wet or dry form. The wet forms, popularly called "acid rain," can fall as rain, snow, or fog. The dry forms are acidic gases or particulates. *See also acid rain.*

**acid-fast**

Not easily decolorized by acids when stained, as the tubercule bacillus.

**acid gas**

A gas that forms an acid when mixed with water.

**acid mantle**

The lipid (oily) outside layer of the skin structure, composed of oil and sweat, easily removed by washing. The acid mantle normally has a pH less than seven.

**acid rain**

The acidity in rain or snow (pH less than 5.6) that results from the oxidation of carbon, sul-

fur, or nitrogen compounds in the air, and their subsequent absorption into the precipitation, thereby making it acidic.

**acidity**

The capacity of an aqueous solution to neutralize a base.

**acidophile**

A tissue, organism, cell, or substance that shows an affinity toward an acidic environment.

**acidophillic**

(1) Having the quality of being easy to stain with acid. (2) Thriving or flourishing in an acid environment.

**acidosis**

A pathologic condition resulting from the accumulation of acid or depletion of the alkaline reserve (bicarbonate content) in the blood and body tissues, and characterized by an increase in hydrogen ion concentration (decrease in pH). The normal pH of the blood is approximately 7.4 (slightly alkaline) and is maintained at that level by chemical buffers and normal functioning of the kidneys and lungs. The opposite of acidosis is *alkalosis*.

**acknowledging device**

*Railroad.* A manually operated electric switch or pneumatic valve by means of which, on a locomotive equipped with an automatic train stop or train control device, an automatic brake application can be forestalled, or by means of which, on a locomotive equipped with an automatic cab signal device, the sounding of the cab indicator can be silenced.

**acknowledging time**

*Railroad.* As applied to an intermittent automatic train stop system, a predetermined time within which an automatic brake application may be forestalled by means of the acknowledging device.

**acknowledgment circuit**

*Railroad.* A circuit consisting of wire or other conducting material installed between the track rails at each signal in the territory where an automatic train stop system or cab signal system of the continuous inductive type with 2 indication cab signals is in service, to enforce acknowledgment by the engineer at each signal displaying an aspect requiring a stop.

**ACLT**

*See actual calculated landing time.*

**acne**

(1) An eruption of hard, inflamed tubercles or pimples on the face, especially during adolescence but also resulting from exposure (for some individuals) to certain chemical substances. (2) An inflammatory disease of the skin, arising from the obstruction of the sebaceous glands.

**acoustic**

(1) The study of sound, including its generation, transmission, and effects. (2) The cause, nature, and phenomena of the vibrations of elastic bodies that affect the organ of hearing. (3) The properties determining audibility or fidelity of sound in an auditorium.

**acoustic absorption coefficient** ( $\alpha$ )

The ratio of energy absorbed by a material to the energy incident to it.

**acoustic descriptor**

The numeric, symbolic, or narrative information describing a product's acoustic properties as they are determined according to the EPA test methodology as per Chapter I (Environmental Protection Agency), Subchapter G (Noise Abatement Programs) of Title 40 (Protection of Environment) of the Code of Federal Regulations.

**acoustic flanking**

The structural transmission of vibrations to elements which re-radiate the sound in the acoustic range.

**acoustic intensity**

Represented as "I" it is the rate of flow of acoustic energy per specified cross-sectional area, as follows:

$$I = \frac{dW}{dA}$$

**acoustic nerve**

See *auditory nerve*.

**acoustic pressure**

See *sound pressure*.

**acoustic reflex**

The contraction of the tensor tympani and stapedius muscles attached to the conducting middle ear bones to increase acoustic impedance in response to a high intensity sound.

**acoustic scattering**

The irregular reflection, refraction, and/or diffraction of sound in many directions.

**acoustic stimulus**

Any varying pressure from air or other fluid having sufficient intensity within the transmitting frequency range of the object or organism. See also *auditory stimulus*.

**acoustic trauma**

A temporary or permanent hearing loss in one or both ears as a result of a sudden loud noise or blow to the head which caused injury or damage to the ear(s).

**acoustical assurance period (AAP)**

A specified period of time or miles driven after sale to the ultimate purchaser during which a newly manufactured vehicle or exhaust system, properly used and maintained, must continue in compliance with the federal standard; reference Chapter I (Environmental Protection Agency), Subchapter G (Noise Abatement Programs) of Title 40 (Protection of Environment) of the Code of Federal Regulations.

**acoustical insulation**

Material designed to absorb noise energy that is incident upon it.

**acoustical treatment**

The use of acoustical (sound) absorbents, acoustical isolation, or other changes or additions to a noise source to improve the acoustical environment.

**acquired character**

A biological change that results from use or environment rather than from heredity.

**acquired immune deficiency syndrome (AIDS)**

A severe (life-threatening) disease that represents the late clinical stage of infection with the *human immunodeficiency virus* (HIV). The HIV most often results in progressive damage to the immune system and various organ systems, especially the central nervous system. Body fluid-to-body fluid contact with an infected HIV carrier is required for transmission. HIV has been recovered from body fluids other than blood, such as tears, saliva, urine, bronchial secretions, spinal fluid, feces, vomitus, and others.

**acquisition**

*Law.* The act of becoming the owner of certain property; the act by which one acquires or procures the property.

**acquisitive offense**

*Law.* A generic term to describe all forms of larceny and offenses against the title or possession of property.

**acquit**

*Law.* To set free, release, or discharge as from an obligation, burden, or accusation. To absolve one from an obligation or a liability; or to legally certify the innocence of one charged with a crime.

**acre**

A quantity of land containing 160 square rods, 4,840 square yards, or 43,560 square feet of land, in whatever shape.

**acre-foot**

The volume of water that would cover a 1-acre area 1 foot deep. Equivalent to 1233.6 cubic meters or 325,850 gallons.

**acrid**

Sharp or biting to the taste or smell.

**acrobatic flight**

An intentional maneuver involving an abrupt change in an aircraft's attitude, an abnormal attitude, or abnormal acceleration not necessary for normal flight.

**acrolein**

An aldehyde compound used as a microbicide and in the manufacture of organic chemicals.

**acromegaly**

A rare glandular disease associated with the overgrowth of bone, especially in the jaws, hands, and feet.

**acromial**

Pertaining to the acromion. The most lateral/superior point of the acromion.

**acromial-biceps circumference-level length**

The surface distance along the outer edge of the arm from acromial to the level at which the relaxed biceps circumference measure is taken. Also called the *acromion-biceps circumference-level length*. Measured with the individual standing erect with arms hanging naturally at the sides and the hands and fingers extended.

**acromial-dactylion length**

The vertical distance from the acromial to the tip of the middle finger. Also called *acromion-dactylion length* and *shoulder-*

*fingertip length*. Measured with the individual standing erect with the arms hanging naturally at the sides.

**acromial height, sitting**

The vertical distance from the upper seat surface to acromial. Measured with the individual sitting erect and his arms hanging naturally at his sides.

**acromial height, standing**

The vertical distance from the floor or other reference surface to the acromial. Measure with the individual standing erect with the arms hanging naturally at the sides, and his/her weight equally distributed on both feet.

**acromial-radial length**

The vertical distance from acromial to radial. Also referred to as *acromion-radial length*. Measured with the individual standing erect and the arms hanging naturally at the sides.

**acromion**

(1) The flattened, expanded bony process at the lateral end of the spine of the scapula used as an anthropometric landmark. (2) The outward end of the spine of the scapula or shoulder blade.

**acroosteolysis**

A condition reported in workers exposed to vinyl chloride and manifested by ulcerating lesions on the hands and feet.

**acrophase**

The peak value in a biological rhythm cycle.

**acropodium**

The most posterior fleshy point on the heel.

**act**

(1) *General.* Denotes external manifestation of a person's will; expression of will or purpose; carrying of an idea into action. (2) *Criminal Law.* External manifestation of one's will which is prerequisite to criminal responsibility. There can be no crime without some act, affirmative or negative. An omission or failure to act may constitute an act for purpose of criminal law. (3) *Legislation.* An alternative name for statutory law. A bill which has been enacted by legislature into law, as the *Occupational Safety and Health Act* of 1970. When introduced into the first house of the legislature, a piece of proposed legislation is known as a bill. When passed to



the next house, it may then be referred to as an act. After enactment the terms *law* and *act* may be used interchangeably. An act has the same legislative force as a *joint resolution* but is technically distinguishable, being of a different form and introduced with the words "Be it enacted" instead of "Be it resolved."

**act of God**

An act occasioned by an unanticipated grave natural disaster or other natural phenomenon of exceptional, inevitable, and irresistible character the effects of which could not have been prevented or avoided by the exercise of due care or foresight.

**actin**

A protein important in the contraction of muscles. A globular protein involved in muscle contraction. *See also actomyosin.*

**actinic**

Pertaining to that range of ultraviolet wavelengths within the electromagnetic spectrum which is capable of causing chemical changes, generally below about 315 nm.

**actinic keratoconjunctivitis**

An inflammatory condition of the corneal and/or conjunctival epithelium of the eye due to exposure to intense ultraviolet lights. *See also welder's flash burn.*

**actinodermatitis**

*See sunburn.*

**actinomycin**

One of the yellow-red or red polypeptide antibiotics separated from soil bacteria.

**actinomycosis**

A fungous disease in animals that is sometimes communicated to man. It most often invades the jaw.

**action level**

(1) Pesticides. Regulatory levels recommended by the EPA for enforcement by the FDA and the USDA when pesticide residues occur in food or feed commodities for reasons other than the direct application of the pesticide. (2) Environmental. In the Superfund Program, the existence of a contaminant concentration in the environment high enough to warrant action or trigger a response under SARA and the National Oil and Hazardous Substances Contingency Plan. The term can be used similarly in other regulatory programs. (3) Safety. An exposure limit usu-

ally set at 50% of the permissible exposure limit (PEL) as specified by the applicable Occupational Safety and Health Administration (OSHA) Standard. Exposures exceeding the action level typically require implementation of certain actions, such as medical surveillance, training, and monitoring programs, but not necessarily further controls (e.g., engineering controls) aimed at reducing exposures.

**action limit**

*Ergonomics.* A NIOSH guideline for the maximum load which should be lifted manually by a healthy person under given conditions to maintain acceptable injury incidence and severity rates.

**action limit ratio**

The ratio of average lift weight to the calculated action limit. *See also action limit.*

**action potential**

A rapid change in electrical potential via the exchange of ions across the cell membrane in nerve and muscle tissues due to an initial depolarization beyond the threshold potential, followed by a return to the resting potential. Also referred to as *nerve impulse* and *spike*.

**action spectrum**

The spectral sensitivity curve for a given type of retinal photosensitive cell.

**actionable fraud**

*Law.* Deception practiced to induce another to part with property or surrender some legal right. A false representation made with an intention to deceive.

**actionable misrepresentation**

*Law.* A false statement respecting a fact material to the contract and which is influential in procuring it.

**actionable negligence**

*Law.* The breach or nonperformance of a legal duty, through neglect or carelessness, resulting in damage or injury to another. It is failure of duty, omission of something which ought to have been done, or doing of something which ought not to have been done. Essential elements are failure to exercise due care, injury, or damage, and proximate cause.

**actionable nuisance**

*Law.* Anything wrongfully done or permitted which injures or annoys another in the enjoyment of his/her legal rights.

**activated alumina**

A partially dehydrated form of aluminum oxide frequently used as an adsorbent, Chemical formula is  $Al_2O_3$ .

**activated biofilter**

Fixed-film biological wastewater treatment process with recycle of return sludge to reactor influent.

**activated carbon (charcoal)**

A highly adsorbent form of carbon used to remove odors and toxic substances from liquid or gaseous emissions. In waste treatment it is used to remove dissolved organic matter from wastewater. It is also used in motor vehicle evaporative control systems.

**activated sludge**

A material that results when primary effluent is mixed with bacteria-laden sludge and then agitated and aerated to promote biological treatment. This speeds breakdown of organic matter in raw sewage undergoing secondary waste treatment.

**activated sludge process**

A biological wastewater treatment process in which a mixture of wastewater and biologically enriched sludge is mixed and aerated to facilitate aerobic decomposition by microbes.

**activation**

In ionizing radiation, refers to the process of making a material radioactive by bombardment with neutrons, protons, or other nuclear radiation or simply the process of inducing radioactivity by irradiation.

**activation analysis**

A method of chemical analysis, especially for small traces of material, based on the detection of characteristic radionuclides.

**activation energy**

The energy required to initiate a process or reaction.

**active**

Resulting from internal causes and/or purposeful effort by an entity.

**active aircraft**

All legally registered civil aircraft which flew one or more hours.

**active ingredient**

Under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA): (1) In the case of a pesticide other than a plant regulator, defoliant, or desiccant, an ingredient which will prevent, destroy, repel, or mitigate any pest. (2) In the case of a plant regulator, an ingredient which, through physiological action, will accelerate or retard the rate of growth or rate of maturation or otherwise alter the behavior of ornamental or crop plants or the product thereof. (3) In the case of a defoliant, an ingredient which will cause the leaves or foliage to drop from a plant. (4) In the case of a desiccant, an ingredient which will produce or artificially accelerate the drying of plant tissue.

**active institutional control**

Under Chapter I (Environmental Protection Agency), Subchapter F (Radiation Protection Programs) of Title 40 (Protection of Environment) of the Code of Federal Regulations: Controlling access to a disposal site by any means other than passive institutional controls; performing maintenance operations or remedial actions at a site; controlling or cleaning up releases from a site; or monitoring parameters related to disposal system performance.

**active isolation**

The energy attenuation or conversion to another form through the use of a system requiring its own energy to operate and acting near or within another system which is generating some undesired energy output.

**active life**

*Environmental.* The period of operation of a facility that begins with initial receipt of a solid waste and ends at completion of closure activities.

**active movement**

The process of moving a limb or other body part by an individual under one's own control. Also known as *volitional movement*.

**active negligence**

*Law.* A term of extensive meaning embracing many occurrences that would fall short of willful wrongdoing, or of crass negligence, for example, all inadvertent acts causing injury to others, resulting from failure to exer-

cise ordinary care; likewise, all acts the effects of which are misjudged or unforeseen, through want of proper attention, or reflection, and hence the term covers the acts of willful wrongdoing and also those which are not of that character.

**active portion**

Any area of a facility where treatment, storage, or disposal operations continue to be conducted.

**active restraint**

A restraining device which has a positive locking feature and requires no action by an individual to be held in place. An example would be a seat belt system in an automobile at the time of collision.

**active safety measure**

Any means of implementing safety precautions which requires an individual to take some action, such as reading or comprehending. An example would be a warning sign indicating an unsafe or hazardous condition.

**active sampling**

An air sampling method in which air is drawn into the sampler where it is exposed to a sensor which measures the concentration of the contaminant in the sampled air, or is absorbed/adsorbed by a sorbent for later analysis. Also referred to as a *pumped sample*. See also *sample draw*.

**active vehicle**

*American Public Transit Association*. Transit passenger vehicles licensed, where required, and maintained for regular use, including spares and vehicles out of service for maintenance purposes, but excluding vehicles in "dead" storage, leased to other operators, in energy contingency reserve status, permanently not usable for transit service, and new vehicles not yet outfitted for active service.

**active vehicles in fleet**

*Federal Transit Association*. The vehicles in the year-end fleet that are available to operate in revenue service, including vehicles temporarily out of service for routine maintenance and minor repairs.

**active window**

That view on a display with which the user is currently interacting.

**activities of daily living**

Those functions normally performed on a daily or near daily basis that are involved in sustenance of the individual (e.g., eating, grooming, dressing, bathing, urination, defecation, etc.). See also *daily living tasks*.

**activity**

In ionizing radiation, the rate of decay of radioactive material expressed as the number of nuclear disintegrations per second; the number of nuclear transformations occurring in a given quantity of material per unit time. The units of activity are the curie (Ci) and the becquerel (Bq). See also *curie* and *becquerel*.

**activity analysis**

A study of the following set and any interrelationships within the set: a) involved individuals, b) the environment, c) the facilities or equipment present or available, and d) the actions required to perform the particular activity under study.

**activity sampling**

A sampling technique using many instantaneous observations of equipment or workers involved in an ongoing process to rate them as either functioning or non-functioning on each sample. Used for estimating the amount of time a machine or worker spends performing some function. Also referred to as *work sampling*, *snap reading technique*, *snap reading method*, and *random observation method*. See also *work measurement*.

**actomyosin**

A combination of actin and myosin which is involved in muscle contraction.

**actual 1985 emission rate**

Under the Clean Air Act (CAA): For electric utility units it means the annual sulfur dioxide or nitrogen oxides emission rate in pounds per million Btu as reported in the NAPAP Emissions Inventory, Version 2, National Utility Reference File. For non-utility units, the term "actual 1985 emission rate" means the annual sulfur dioxide or nitrogen oxides emission rate in pounds per million Btu as reported in the NAPAP Emission Inventory, Version 2. See *utility unit* and *non-utility unit*.

**actual calculated landing time (ACLT)**

A flight's frozen calculated landing time. An actual time determined at freeze calculated landing time (FCLT) or meter list display in-

terval (MLDI) for the adapted vertex for each arrival aircraft based upon runway configuration, airport acceptance rate, airport arrival delay period, and other metered arrival aircraft. This time is either the vertex time of arrival (VTA) of the aircraft or the tentative calculated landing time (TCLT)/actual calculated landing time (ACLT) of the previous aircraft plus the arrival aircraft interval (AAI), whichever is later. This time will not be updated in response to the aircraft's progress.

**actual coverage**

See *standard coverage*.

**actual damages**

Real, substantial, and just damages, or the amount awarded to a complainant in compensation for his/her actual and real loss or injury, as opposed on the one hand to *nominal* damages and on the other to *exemplary* or *punitive* damages. Synonymous with *compensatory damages* and *general damages*. See also *damages*.

**actual service**

*Federal Transit Association*. Total service operated during each time period. Actual service excludes missed trips and service interruptions (such as strikes, emergency shutdowns), but also includes deadheading. Actual service is measured by vehicles in service, in miles and/or hours.

**actual severity**

*United States Coast Guard*. On scene evaluation of the degree of danger that existed. An "after-the-fact" evaluation by the reporting unit.

**actual time**

See *observed time*.

**actual vapor pressure**

See *vapor pressure*.

**actual vehicle miles/hours**

The miles/hours a vehicle travels while in revenue service (actual vehicle revenue miles/hours) plus deadhead miles/hours. For rail vehicles, vehicle miles/hours refer to passenger car miles/hours. Actual vehicle miles/hours exclude miles and hours for charter services, school bus service, operator training, and maintenance testing.

**actuation force**

That force required to overcome static friction and begin the movement of a control or other mechanical device.

**actuation torque**

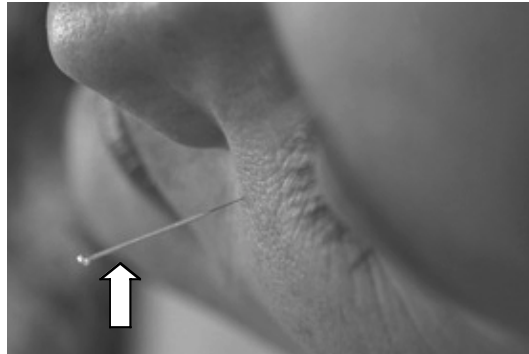
That force directed at some distance from the center of rotation which is required to overcome static friction and begin rotation of a control or other mechanical device.

**acuity**

Of or pertaining to the sensitivity of receptors used in hearing and vision; acuteness, or sharpness of the senses. See also *visual acuity*, *vernier acuity*, *Snellen acuity*, *stereoscopic acuity*, and *resolution acuity*.

**acupuncture**

An ancient Chinese technique of puncturing certain points in the body with long thin needles to treat painful conditions and to produce local anesthesia.



*Acupuncture needle (at arrow) applied just under patient's eye*

**acute**

Having a sudden onset and reaching a crisis rapidly. Effects are observed in a short period of time following exposure to an acute toxicant.

**acute dermal LD<sub>50</sub>**

The single dermal dose of a substance, expressed as milligrams per kilogram of body weight, that is lethal to 50% of the test population of animals under specified test conditions.

**acute effect**

An effect that results following a brief exposure to a chemical, biological, or physical agent. For example, severe skin irritation and even corrosive damage can occur after brief exposure to acids or bases, depending upon the strength of the chemical, the duration of contact, and the size of the exposure area.

**acute exposure**

(1) *Chemical*. A sudden, short, rapid association with a chemical compound. (2) *Radia-*

*tion*. Exposure of short duration, generally taken to be the total dose absorbed within 24 hours. (3) *Biologic*. A brief encounter with a pathogenic or nonpathogenic microorganism.

**acute LC<sub>50</sub>**

A concentration of a substance, expressed as parts per million parts of medium (e.g., air, water, etc.), that is lethal to 50% of the test population of animals under specified test conditions.

**acute oral LD<sub>50</sub>**

A single orally administered dose of a substance, expressed as milligrams per kilogram of body weight, that is lethal to 50% of the test population of animals under specified test conditions.

**acute oxygen toxicity**

A central nervous system disorder due to breathing pure oxygen at higher than normal pressures for several minutes to a few hours, depending on the pressure, and characterized by a range of symptoms from muscle twitching to convulsions. *See also chronic oxygen toxicity.*

**acute radiation effects**

Any of one or more types of illnesses or other bodily disorders that follow exposure to relatively high doses of ionizing radiation resulting in deaths of significant numbers of cells.

**acute radiation syndrome**

A medical term for radiation sickness. *See also acute radiation effects.*

**acute reaction**

A sudden physiologic response as a result of an exposure to a hazard (i.e., chemical, physical, biological, ergonomic, etc.).

**acute toxicity**

The ability of a substance to cause poisonous effects resulting in severe biological harm or death soon after a single exposure or dose. Also, any severe poisonous effect resulting from a single short-term exposure to a toxic substance.

**ACV**

*See aquatic chronic value.*

**adaetylia**

Absence of fingers or toes, or both, from birth.

**Adam's apple**

The prominence of the thyroid cartilage on the fore part of throat, predominantly in men.

**adaptation**

(1) A change in an organism's structure or habit that helps it to adjust to its surroundings. (2) A self-generated adjustment in a system in response to changes in the environment as an attempt to maintain functionality. Also referred to as *adaptive response*. *See also sensory adaptation and perceptual adaptation.*

**adaptive control**

A form of automated control equipped with a self-contained decision-making capability for modifying its own operation based on previous experience.

**adaptive equipment**

Any type of equipment which enables a disabled or other individual to operate a machine or system.

**adaptive response**

*See adaptation.*

**adaptometer**

An instrument designed to determine the degree of retinal adaptation or the time course over which adaptation occurs by measuring changes in an observer's threshold for light detection.

**add on control device**

An air pollution control device such as a carbon absorber or incinerator which reduces the pollution in an exhaust gas. The control device usually does not affect the process being controlled and thus is "add on" technology, as opposed to a scheme to control pollution through making some alteration to the basic process.

**addict**

One who is addicted to a practice or a habit, especially to narcotics.

**addiction**

The state of being addicted; habitual, compulsive use of narcotics.

**addictive**

Causing addiction; one of a class of drugs that are habit-forming in nature.

**Addison's disease**

A disease characterized by asthenia, digestive disturbances, and usually a brownish coloration.

tion of the skin caused by disturbance of function of the adrenal glands.

**additional capital invested**

The difference between the price at which capital stock is sold and the par or stated value of the stock, gains or losses arising from the reacquisition and the resale or retirement of each class and series of capital stock, donations, the excess of retained earnings capitalized over par or stated value of capital stock issued, adjustments in capital resulting from reorganization or recapitalization, proceeds attributable to detachable stock purchase warrants related to debt issues, and contributions to the business enterprise by individual proprietors or partners.

**additional insured**

A person, other than the named insured, such as the insured person's spouse, who is protected under the terms of the contract. *See also insurance.*

**additional services**

Advisory information provided by Air Traffic Control (ATC) which includes but is not limited to the following: 1) Traffic advisories. 2) Vectors, when requested by the pilot, to assist aircraft receiving traffic advisories to avoid observed traffic. 3) Altitude deviation information of 300 feet or more from an assigned altitude as observed on a verified (reading correctly) automatic altitude readout (Mode C). 4) Advisories that traffic is no longer a factor. 5) Weather and chaff information. 6) Weather assistance. 7) Bird activity information. 8) Holding pattern surveillance. Additional services are provided to the extent possible contingent only upon the controller's capability to fit them into the performance of higher priority duties and on the basis of limitations of the radar, volume of traffic, frequency congestion, and controller workload. The controller has complete discretion for determining if he is able to provide or continue to provide a service in a particular case. The controller's reason not to provide or continue to provide a service in a particular case is not subject to question by the pilot and need not be made known to him/her.

**additional vehicle**

*Government Services Administration.* A vehicle added to the inventory of a Fleet Management Center to fill a new program or to

expand on an existing program of a participating agency.

**additional work allowance**

*See excess work allowance.*

**additive**

A substance added in small amounts to another for improvement, as a drug added to a medicine.

**additive color mixing**

The addition of colored lights to an already illuminated surface or region, resulting in a change of apparent color. Also known as *light mixing.*

**additivity**

Interaction of a mixture of substances in which exposure results in a response equal to the sum of the responses expected from each component of the mixture.

**adduct**

(1) *Chemistry.* An un-bonded association of two molecules, in which a molecule of one component is either wholly or partly locked within the crystal lattice of the other. (2) *Physiology.* To draw (one's limb) toward the body's main axis.

**adduction**

The action by which a part of the body is drawn toward the body's axis.

**adductor**

In physiology, the muscle that draws toward the mesial line of the body.

**adenalgia**

A glandular pain.

**adenitis**

Inflammation of gland or lymph nodes.

**adenocarcinoma**

A malignant tumor that appears in glandular epithelium.

**adenofibroma**

A benign tumor of connective tissue frequently found in the uterus.

**adenoid**

An enlarged mass of lymphoid tissue in the upper pharynx that hinders nasal breathing.

**adenoma**

A benign epithelial tumor in which the cells form recognizable glandular structures or in



which the cells are clearly derived from glandular epithelium.

**adenomatosis**

The condition of multiple glandular enlargement.

**adenosine (ATP)**

A crystalline nucleoside, derived from the nucleic acid of yeast, which upon undergoing hydrolysis yields adenine and ribose.

**ADF**

See *automatic direction finder*.

**adhesion**

(1) *General*. Molecular attraction that holds surfaces of two substances in contact. (2) *Physiology*. A growth of scar tissue resulting from an incision; the abnormal union of adjacent tissues resulting from inflammation.

**adhesive dirt**

Any form of dirt which tends to remain attached to a surface through an inherent stickiness. See also *dirt*.

**adiabatic**

Refers to a reaction that occurs without a gain or loss (or transfer) of heat between the system (such as an air parcel) and its surroundings. In an adiabatic process, compression always results in warming and expansion results in cooling.

**adiabatic lapse rate**

The constant rate at which temperatures decrease as altitude increases. In a dry atmosphere the dry adiabatic lapse rate (DALR) is approximately -1.00°C per 100 meter rise.

**adipose tissue**

That tissue composed primarily of fat cells with connective tissue for support.

**ADIZ**

See *Air Defense Identification Zone*.

**adjudicate**

To settle in the exercise of judicial authority.

**adjudicated rights**

Rights which have been recognized in a judicial or administrative proceeding.

**adjudication**

To hear and decide a case. Refers to the judge's decision. The legal right to resolve a dispute.

**adjudicative facts**

Factual matters concerning the parties to an administrative proceeding as contrasted with legislative facts which are general and usually do not touch individual questions of particular parties to a proceeding.

**adjudicatory proceedings**

A legal proceeding in a government agency wherein the rights and duties of specifically named parties are decided by applying law and policy to facts. Also known as a Trial Type proceeding. This usually carries with it a right to appeal to a higher level within the agency or court.

**adjustable speed drives**

Drives that save energy by ensuring the motor's speed is properly matched to the load placed on the motor. Terms used to describe this category include polyphase motors, motor oversizing, and motor rewinding.

**adjutant general**

An officer in charge of the National Guard of one of the States. The administrative head of a military unit having a general staff.

**Adler's theory**

An approach to psychology based on the hypothesis that behavior is governed by an effort to compensate for inferiority or deficiency.

**administrative agency**

A governmental body charged with administering and implementing particular legislation, such as the Occupational Safety and Health Administration (OSHA) that is charged with the administration of the Occupational Safety and Health Act.

**administrative authority**

The power of an agency or its head (the administrator) to carry out the terms of law creating that agency as well as to make regulations for the conduct of business before that agency; distinguishable from legislative authority to make laws.

**administrative class V road**

An administrative access road which consists of all public roads intended for access to administrative developments or structures such as offices, employee quarters, or utility areas.

**administrative class VI road**

A restricted road normally closed to the public, including patrol roads, truck trails, and other similar roads.



**administrative control**

A measure initiated to reduce worker exposure to various stresses in the work environment. An example is limiting the amount of time an employee can work around health hazards.

**administrative law**

Refers to that body of law that governs the methods by which administrative agencies make and implement decisions. Federal administrative law is based primarily on specific provisions of the U.S. Constitution, as well as various other federally mandated statutes. It is within this regulatory framework of administrative law that the basis for occupational safety and health legislation obtains the force of law.

**administrative law judge**

One who presides at an administrative hearing, with power to administer oaths, take testimony, rule on questions of evidence, regulate course of proceedings, and make agency determinations of fact.

**administrative office of the United States courts**

Created by the Administrative Office Act of 1939, it is responsible for administration of the federal court system, as a whole, including collection of statistics on court business, supervision of administrative personnel in the courts, and conducting of financial and management audits of the courts.

**administrative officer**

Politically, and as used in constitutional law, an officer of the executive department of government, and generally one of inferior rank; legally, a ministerial or executive officer, as distinguished from a *judicial officer*.

**administrative order**

The final disposition of a matter before an administrative agency, such as the Environmental Protection Agency (EPA), directing an individual, business, or other entity to take corrective action or refrain from an activity. It describes the violations and actions to be taken, and can be enforced in court. Such orders may be issued, for example, as a result of an administrative complaint whereby the respondent is ordered to pay a penalty for violations of a statute.

**administrative procedure**

Methods and processes before administrative agencies as distinguished from judicial procedure which applies to courts. Procedural rules and regulations of most federal agencies are set forth in the Code of Federal Regulations. *See also Administrative Procedure Act.*

**Administrative Procedures Act**

A federal law enacted in 1946 (60 Stat. 237, 5 U.S.C.A) that provides procedures and requirements related to the promulgation of regulations by federal agencies, such as the EPA and OSHA. Individual states have also enacted variations of the federal act.

**administrative process**

In general, the procedure used before administrative agencies; in particular, the means of summoning witnesses before such agencies (e.g., the subpoena).

**administrative record**

The compilation of documents and exhibits by an agency to support or explain a decision. Often used to describe the written basis of a regulatory decision by EPA or a state environmental agency to promulgate a regulation or issue or deny a permit or license.

**administrative review**

Generally refers to judicial review of administrative proceedings; may also embrace appellate review within the administrative agency itself.

**administrative road**

Consists of all public and non-public roads intended to be used principally for administrative purposes. It includes roads servicing employee residential areas, maintenance areas and other administrative developments, as well as restricted patrol roads, truck trails, and similar service roads.

**administrative rule**

A regulation which implements a law. Since the implementation of a law often requires technical experience and familiarity with the area being regulated, the legislature often grants a state agency the authority to write rules. Before these rules are enforceable, the Administrative Procedures Act (1969, PA 306, as amended) requires that public hearings be conducted on the rules and approval is granted by the Legislative Service Bureau, the Attorney General, the Joint Committee on

Administrative Rules, and the agency which prepared the rules. The rules are then filed with the Secretary of State, after which they become enforceable.

**administrative rule-making**

Power of an administrative agency to make rules and regulations for proceedings before it.

**administrative tribunal**

A particular administrative agency before which a matter may be heard or tried as distinguished from a judicial forum.

**admission**

A granting of truth or a conceding of truth from the courts.

**admixture**

- (1) A material or substance added in mixing.
- (2) A substance other than cement, aggregate, or water that is mixed with concrete.

**ad nauseam**

To the point of being sickening.

**adolescent growth spurt**

A phase in the maturing individual near puberty at which peak height and weight velocities occur, along with changes in body composition.

**adrenal gland**

In mammals, a gland adjacent to the kidney that produces the hormone adrenaline, or epinephrine. The hormone influences the heart-beat rate, dilates blood vessels, increases blood sugar, and plays a major role in other physiological activities of mammals.

**adrenaline**

*See epinephrine.*

**adsorb**

The condensation of a gas, liquid, or dissolved substance on the surface of a solid.

**adsorbate**

A material adsorbed on the surface of another.

**adsorption**

- (1) Condensation of gases, liquids, or dissolved substances on the surface of solids.
- (2) The attraction and retention of atoms, molecules, or ions on the surface of a solid.

**adult chorea**

*See Huntington's chorea.*

**adulterants**

Chemical impurities or substances that by law do not belong in a food or in a pesticide.

**adulterated pesticide**

Applies to any pesticide if its strength or purity falls below the professed standard of quality as expressed on the labeling under which it is sold; any substance has been substituted wholly or in part for the pesticide; or any valuable constituent of the pesticide has been wholly or in part abstracted.

**ad valorem**

- (1) A charge levied on persons or organizations based on the value of a transaction. It is normally a given percentage of the price at the retail or manufacturing stage and is a common form of sales tax, e.g., federal excise tax on new trucks and trailers.
- (2) A freight rate set at a certain percentage of the value of an article.
- 3) A set percentage of the value of taxable goods determined by the price at the port of shipment and calculated for duty assessment.

**Advanced Dynamic Anthropometric Mannequin (ADAM)**

An anthropometric dummy developed by the United States Air Force to represent human anthropometry and vertical dynamic response for ejection seat testing.

**advanced oxidation processes (AOPs)**

Processes using a combination of disinfectants, such as ozone and hydrogen peroxide, to mineralize toxic organic compounds to nontoxic form.

**Advanced Notice of Proposed Rule-making (ANPRM)**

A notice appearing in the Federal Register indicating the intention of a government agency to develop a regulation on the issue indicated in the notification.

**advanced secondary treatment (AST)**

Secondary wastewater treatment with enhanced solids separation.

**advanced wastewater treatment (AWT)**

Any treatment of sewage that goes beyond the secondary or biological water treatment stage and includes the removal of nutrients such as phosphorus or nitrogen and a high percentage of suspended solids.

**advection**

Movement caused by the motion of heat, air, water, or another fluid. It specifically refers to the horizontal movement by wind currents of chemical pollutants or heat.

**advection fog**

Occurs when warm, moist air moves over a cold surface and the air cools to below its dew point.

**advection frost**

*See freeze.*

**adversary system**

The jurisprudential network of laws, rules, and procedures characterized by opposing parties who contend against each other for a result favorable to themselves. In such system, the judge acts as an independent magistrate rather than a prosecutor; distinguished from inquisitorial system.

**adverse effect**

An effect which results in an impairment of the functioning of an organism or which reduces an organism's ability to respond to insult.

**adverse environmental effect**

Any significant and widespread adverse effect, which may reasonably be anticipated, to wildlife, aquatic life, or other natural resources, including adverse impacts on populations of endangered or threatened species or significant degradation of environmental quality over broad areas.

**adverse weather**

The weather conditions considered by the operator in identifying the response systems and equipment to be deployed in accordance with a response plan, including wave height, ice, temperature, visibility, and currents within the inland or Coastal Response Zone (defined in the National Contingency Plan (40 CFR 300)) in which those systems or equipment are intended to function.

**adverse witness**

A witness who gives evidence on a material that is prejudicial or unfavorable to the party that original called the witness.

**advice of counsel**

A defense used in actions for malicious prosecution which requires a finding that the defendant presented all facts to his/her counsel and the he/she honestly followed counsel's advice.

**advise intentions**

A spoken term, usually by an air traffic controller to a pilot or, sometimes, vice versa, meaning: "Tell me what you plan to do."

**advising bank**

A domestic bank which handles letters of credit for a foreign bank by notifying the exporter that the credit has been opened in his favor, fully informing him/her of the conditions and terms without responsibility on the part of the bank.

**advisory**

(1) A non-regulatory document that communicates risk information to persons who may have to make risk management decisions. (2) Counseling, suggesting, or advising, but not imperative or conclusive.

**advisory committees**

Groups of experts used by regulatory agencies such as OSHA to study and advise on certain regulatory issues. The committees consist of persons from outside the agency who may have certain expertise in a given area. These committees do not supersede the agency's regulatory powers or responsibilities. They only provide input on specific technical and/or policy issues that arise in the course of agency activities.

**advisory counsel**

Attorney retained to give advice as contrasted with trial counsel.

**advisory frequency**

*Federal Aviation Administration.* The appropriate frequency to be used for Airport Advisory Service.

**advisory light**

A visual indicator which provides information on the operation of essential equipment. *See also advisory signal.*

**advisory opinion**

Such may be rendered by a court at the request of the government or an interested party indicating how the court would rule on a matter should adversary litigation develop. An advisory opinion is thus an interpretation of the law without binding effect.

**advisory service**

*Federal Aviation Administration.* Advice and information provided by a facility to assist

pilots in the safe conduct of flight and aircraft movement.

**advisory signal**

Any type of signal which indicates the condition of equipment or operations. *See also [advisory light](#).*

**advocacy**

The act of pleading for, supporting, or recommending active espousal.

**advocate**

One who assists, defends, or pleads for another. One who renders legal advice and aid and pleads the cause of another before a court or a tribunal; a counselor. A person learned in the law, and duly admitted to practice, who assists his/her client with advice, and pleads for him/her in open court.

**AEC**

U.S. Atomic Energy Commission (the former name of the present Nuclear Regulatory Commission).

**aeolian deposit**

Soil deposited by the wind.

**aeration**

A process which promotes biological degradation of organic water. The process may be passive (as when waste is exposed to air) or active (as when a mixing or bubbling device introduces the air).

**aeration tank**

A chamber used to inject air into water.

**aerator**

A device used to introduce air or oxygen into water or wastewater.

**aeremia**

The presence of air in the blood.

**aerial application**

*Federal Aviation Administration.* Any use of an aircraft for work purposes which concerns the production of foods, fibers, and health control in which the aircraft is used in lieu of farm implements or ground vehicles for the particular task accomplished. This includes fire fighting operations, the distribution of chemicals or seeds in agriculture, reforestation, or insect control.

**aerial application flying**

*National Transportation Safety Board.* The operation of aircraft for the purpose of dis-

persing any substance for plant nourishment, soil treatment, propagation of plant life, pest control, or fire control, including flying to and from the application site.

**aerial observation**

*Federal Aviation Administration.* Any use of an aircraft for aerial mapping and photography, survey, patrol, fish spotting, search and rescue, hunting, highway traffic advisory, or sightseeing; not included under FAR Part 135.

**aerial refueling**

*Federal Aviation Administration.* A procedure used by the military to transfer fuel from one aircraft to another during flight.

**aerial tramway**

(1) *American Public Transit Association.* An electric system of aerial cables with suspended unpowered passenger vehicles. The vehicles are propelled by separate cables attached to the vehicle suspension system and powered by engines or motors at a central location not on board the vehicle. (2) *Federal Transit Association.* Unpowered passenger vehicles suspended from a system of aerial cables and propelled by separate cables attached to the vehicle suspension system. The cable system is powered by engines or motors at a central location not on board the vehicle.

**aeroallergen**

Airborne material, such as particulates, pollen, dusts, and dander, that may precipitate an allergic response in susceptible persons.

**aerobe**

A microorganism whose existence requires the presence of air or free oxygen, as opposed to an anaerobe.

**aerobic**

Describes an environment with molecular oxygen present; organisms that live or grow in the presence of molecular oxygen; reactions that occur in the presence of molecular oxygen.

**aerobic bacteria**

Bacteria that require free oxygen to sustain their life processes.

**aerobic capacity**

*See [maximal aerobic capacity](#).*

**aerobic digestion**

Sludge stabilization process in which aerobic biological reactions destroy biologically degraded organic components of sludge.

**aerobic endurance capacity**

See *maximal aerobic capacity*.

**aerobic energy**

That energy which can be derived from food-stuffs by aerobic metabolism.

**aerobic metabolism**

The normally complete physiological oxidation of glucose or other bodily fuels in the presence of adequate oxygen to water and carbon dioxide.

**aerobic treatment**

Process by which microbes decompose complex organic compounds in the presence of oxygen and use the liberated energy for reproduction and growth. Types of aerobic processes include extended aeration, trickling filtration, and rotating biological contactors.

**aerobic work capacity**

See *maximal aerobic capacity*.

**aerodrome**

A defined area on land or water (including any buildings, installations, and equipment) intended to be used either wholly or in part for the arrival, departure, and movement of aircraft. Aerodromes may include airports, heliports, and other landing areas. See also *airport* and *heliport*.

**aerodrome beacon**

Aeronautical beacon used to indicate the location of an aerodrome from the air.

**aerodrome control tower**

A unit established to provide air traffic control service to aerodrome traffic.

**aerodrome elevation**

The elevation of the highest point of the landing area.

**aerodrome traffic circuit**

The specified path to be flown by aircraft operating in the vicinity of an aerodrome.

**aerodynamic coefficient**

Non-dimensional coefficients for aerodynamic forces and moments.

**aerodynamic diameter**

The diameter of a unit density sphere having the same settling velocity as the particle in question of whatever shape and density. It is also referred to as equivalent diameter.

**aeromedicine**

That branch of medicine concerned with disorders that result from or occur during flying.

**aeronautical beacon**

A visual Navigation Aid (NAVAID) displaying flashes of white and/or colored light to indicate the location of an airport, a heliport, a landmark, a certain point of a federal airway in mountainous terrain, or an obstruction.

**aeronautical chart**

A map used in air navigation containing all or part of the following topographic features: hazards and obstructions, navigation aids, navigation routes, designated airspace, and airports.

**Aeronautical Information Manual (AIM)**

A primary Federal Aviation Administration (FAA) publication whose purpose is to instruct airmen about operating in the National Airspace System of the U.S. It provides basic flight information, Air Traffic Control (ATC) procedures, and general instructional information concerning health, medical facts, factors affecting flight safety, accident and hazard reporting, and types of aeronautical charts and their use. Also referred to as *Airmen's Information Manual*.

**aeronautics**

Science that focuses on the operation of aircraft; also the art or science of operating aircraft.

**aeroneurosis**

A psychoneurotic condition occurring in airmen and aviators resulting from nervous tension, worry, or fatigue, characterized by mild depression, abdominal pain, insomnia, and nervous irritability.

**aerosol**

(1) A dispersion of solid or liquid particles of microscopic size in a gaseous medium. Smokes, fogs, fibers, dusts, and mists are examples of common aerosols. (2) Atomized particles ejected into the air from a pressurized can. (3) A solution of bactericidal substances that are atomized to sterilize the air of a room.

**aerosol photometer**

An instrument used for detecting aerosols (i.e., dusts, mists, fumes, etc.) by exposing them to a source of illumination, typically a beam of light, as they are drawn through an

enclosed volume and measuring the scattered light created by the aerosol as it passes through the light beam.

**aerospace**

Pertaining to equipment, vehicles, or activities in either or both a planetary atmosphere and space.

**aerovane**

A wind instrument that indicates or records both wind speed and wind direction.

**Aesculapian**

(1) Of or pertaining to Aesculapius, the Greco-Roman god of healing. (2) Referring to the art of healing.

**aesthetic**

See *asthenic*.

**AFARMRL Anthropometric Data Bank**

A computerized database of several anthropometric surveys, consisting of both American and foreign subjects.

**AFC**

See *automatic fare collection system*.

**affect**

To act upon; influence; change; enlarge or abridge; often used in the sense of acting injuriously upon persons and things.

**afferent**

Conducting a signal, information, or a substance toward a central point, usually referring to neural structures.

**afferent nerve**

A nerve which conducts sensory information from a receptor toward the spinal cord and/or the brain. Also referred to as a *sensory nerve*.

**AFFF**

See *aqueous film forming foam*.

**affirmative action program**

Employment programs required by federal statutes and regulations designed to remedy discriminatory practices in hiring minority group members. Factors considered are race, color, sex, creed, and age.

**affirmative defense**

(1) *General Law*. In pleading, matter asserted by defendant which, assuming the complaint to be true, constitutes a defense to it. A response to a plaintiff's legal right to bring an action, as opposed to attacking the truth of

claim. (2) *OSHA*. A category of defending against an OSHA citation which basically holds that the employer is not specifically arguing the fact that the cited condition(s) existed. The defense is really to the contrary. By not disputing the cite itself, the employer actually affirms the allegation of non-compliance but offers substantial proof to justify reasons for not complying with the cited standard(s).

**affricate**

The type of sound produced on complete closure of the vocal tract followed by a constriction.

**AFO**

Air fail open.

**AFPA**

American Forest and Paper Association.

**afterburner**

In incinerator technology, a burner located so that the combustion gases are made to pass through its flame in order to remove smoke and odors. It may be attached to or be separated from the incinerator proper.

**aftercondenser**

A condenser installed as the last stage of an evaporator venting system to minimize atmospheric steam discharge.

**after-flame**

The time a test specimen continues to flame after the flame source has been removed.

**afterimage**

An aftersensation in the visual system. See also *aftersensation*, *positive afterimage* and *negative afterimage*.

**aftersensation**

A sensory impression in any modality which persists after cessation of the causing stimulus, but which may have different characteristics from the original stimulus.

**aftershock**

Any earthquake which occurs after a larger earthquake (a *mainshock*) within one rupture-length of the original fault rupture before the seismicity rate in that area has returned to the background (pre-mainshock) level is generally considered an aftershock. For some earthquakes, a specific *aftershock zone* may



be defined, in lieu of the one-rupture-length given above.

**afterslip**

A seismic slip, very similar to *creep*, that occurs along a fault ruptured by a large earthquake in the months following that event. *See also creep.*

**after the fact**

Subsequent to an event from which time is reckoned, e.g., accessory after the fact is one who harbors, conceals, or aids in the concealment of the principal felon after the felony has been committed.

**against public interest**

An agreement or act which is or has been declared to be adverse to the general good or public welfare such that a judge may, on his/her own, declare it void.

**agar**

A gelatinous substance extracted from a red algae, commonly used as a medium for laboratory cultivation of bacteria.

**agar plate**

A circular glass plate, containing a nutrient, used to culture microorganisms.

**agency**

(1) A relationship between two persons, by agreement or otherwise, where one (the agent) may act on behalf of the other (the principal) and bind the principal by words and actions. (2) The relation created by express or implied contract or law whereby one party delegates the transaction of some lawful business with more or less discretionary power to another who undertakes to manage the affair and render an account thereof. (3) The location or place at which business of a company, organization, or individual is transacted by an agent. (4) A department, division, or administration within the federal government (e.g., OSHA, EPA)

**agent**

(1). *Science.* A biological, physical, or chemical entity capable of causing disease. (2) *Law.* A person authorized by another (the principal) to act for or in place of him/her. For example, an individual who, while not an employee, is authorized to act on behalf of the organization in activities or practices which, if

abused, can expose the organization to criminal liability.

**agent orange**

A toxic herbicide and defoliant which was used in the Vietnam conflict. It contains 2,4,5-T trichlorophenoxyacetic acid (2,4,5-T) and 2-4 dichlorophenoxyacetic acid (2,4-D) with trace amounts of dioxin.

**agent-specific disease**

A disease known to be caused only by one factor.

**ageusia**

An impairment in or loss of the sense of taste; taste blindness. Also referred to as *ageusia*.

**AGGIE**

A general purpose, 3-D nonlinear finite element structures numerical modeling program.

**agglomeration**

The process by which precipitation particles grow larger by collision or contact with cloud particles or other precipitation particles.

**agglutination**

The process of uniting solid particles coated with a thin layer of adhesive material or of arresting solid particles by impact on a surface coated with an adhesive.

**aggravating factors**

An increase in the amount of damages or penalties. Under the Federal Sentencing Guidelines (FSGs) for Organizations, factors considered in sentencing for an organization to receive increased penalties are (1) management involvement in or tolerance of criminal activities; (2) the organization's prior criminal, civil, and administrative history; (3) violations of a court order or probation; and (4) obstruction of justice. *See also FSGs.*

**aggregate**

(1) *General.* The entire number, sum, mass, or quantity of something; total amount; complete whole. (2) *Ergonomics.* The combination of the tool being manipulated or mass being lifted/carried with those primary body parts affected or used in the operation.

**aggregate ratio**

*See estimate ratio, mean and ratio estimate.*

**aggressive sampling**

A sampling procedure employed following asbestos removal activities to demonstrate

that the area is not contaminated with materials which contain asbestos fibers. It typically involves stirring up the air in the abated area to produce worst-case conditions, collecting air samples during this procedure, and analyzing the samples to determine the airborne level of asbestos fibers as structures per cubic centimeter.

**aggrieved party**

One whose legal right is invaded by an act complained of, or whose pecuniary interest is directly and adversely affected by a decree or judgment.

**agitator body**

Truck body designed and equipped to mix concrete in transit.

**agnosia**

Inability to comprehend a sensory perception, although the sensory sphere is intact. Agnosia results from disorders of the brain or nervous system.

**agonist**

See *prime mover*.

**agranulocyte**

A leukocyte that does not have cytoplasmic granules.

**agranulocytosis**

A serious, destructive blood disease distinguished by a decrease of the leukocytes.

**agravic illusion**

See *oculoagravic illusion*.

**Agreement State**

In ionizing radiation, a State that has signed an agreement with the U.S. Nuclear Regulatory Commission allowing the State to regulate certain activities for the use of radioactive materials not normally regulated by the State.

**agricultural**

Any inorganic, artificial, or manufactured chemical substances used in agricultural processes, usually as fertilizers, herbicides, and pesticides.

**agricultural**

Pertaining to, or dealing with, agriculture; also, characterized by or engaged in farming as the leading pursuit.

**agricultural commodity trailer**

A trailer that is designed to transport bulk agricultural commodities from off-road har-

vesting sites to a processing plant or storage location, as evidenced by skeletal construction that accommodates harvest containers, a maximum length of 28 feet, and an arrangement of air control lines and reservoirs that minimizes damage in field operations.

**agricultural labor**

Services performed on a farm, for or on behalf of the owner or tenant.

**agricultural pollution**

The liquid and solid wastes from farming, including runoff and leaching of pesticides and fertilizers; erosion and dust from plowing; animal manure and carcasses; crop residues; and debris.

**agricultural solid waste**

Solid waste generated by the rearing of animals, and the producing and harvesting of crops or trees.

**agriculture**

The science or art of cultivating the soil, harvesting crops, and raising livestock; also as the science or art of the production of plants and animals useful to man and in varying degrees the preparation of such products for man's use and their disposal.

**agronomy**

Branch of agriculture that deals with the raising of crops and the care of the soil.

**A-h**

Ampere-hour.

**AHERA**

Asbestos Hazards and Emergency Response Act.

**A-horizon**

Topsoil, or the uppermost layer of soil containing the highest accumulation of mineral and organic matter.

**AHP**

Air horsepower.

**AHS**

Air handling system; aquatic humic substances.

**AHU**

See *air-handling unit*.

**AIA**

Asbestos Information Association.

**AICHE**

American Institute of Chemical Engineers.



**aid**

To support, help, assist, or strengthen. To act in cooperation with; supplement the efforts of others.

**aid and abet**

To help, assist, or facilitate the commission of a crime, promote the accomplishment thereof, help in advancing or bringing it about, or encourage, counsel, or incite as to its commission. It includes all assistance rendered by words, acts, encouragement, support, or presence. actual or constructive, to render assistance if necessary.

**AIDS**

See *acquired immune deficiency syndrome*.

**AIG**

See *Airbus Industries Group*.

**AIHA**

See *American Industrial Hygiene Association*.

**AIHA accredited laboratory**

A certification given by the AIHA to an analytical laboratory that has met specific requirements and successfully participated in the "proficiency Analytical Testing" program for quality control as established by the National Institute for Occupational Safety and Health.

**AIHC**

(1) American Industrial Health Council. (2) American Industrial Health Conference.

**AIM**

See *Aeronautical Information Manual*.

**AIP**

See *airport improvement program*.

**AIPE**

American Institute of Plant Engineers.

**air**

The mixture of gases that surrounds the earth. The major constituents of air are nitrogen (78.08%), oxygen (20.95%), argon (0.93%), and carbon dioxide (0.03%).

**air-blower noise**

See *air-handler noise*.

**air bone gap**

The decibel difference in the hearing ability level at a particular frequency as determined

by air conduction and bone audiometric testing.

**air-bound**

Obstruction of water flow in a pipeline or pump due to the entrapment of air.

**air brake**

A brake in which the mechanism is actuated by manipulation of air pressure. The term is often used to describe brakes that employ air under pressure above atmospheric, in contrast to vacuum brakes, which employ pressure below atmospheric.

**air cargo**

Cargo is freight and mail, loaded and unloaded (arriving and departing) at the airport. It is the total volume of freight, mail, and express traffic transported by air and includes the following: Freight and Express commodities of all kinds, including small package counter services, express services, and priority reserved freight; U.S. Mail in all classes of mail transported for the U.S. Postal Service. *Freight* is any property carried on an aircraft other than mail, stores, and baggage. *Mail* comprises closed bags handed over by the postal service, whatever their contents may be and does not include passenger baggage and trucked freight.

**air carrier**

(1) A person who undertakes directly by lease, or other arrangement, to engage in air transportation. (2) Commercial system of air transportation, consisting of domestic and international scheduled and charter service. (3) Commercial system of air transportation consisting of certificated air carriers, air taxis (including commuters), supplemental air carriers, commercial operators of large aircraft, and air travel clubs. (4) As defined in the Federal Aviation Act of 1958, any citizen of the United States who undertakes, whether directly or indirectly, or by lease or any other arrangement, to engage in air transportation. (5) An air carrier holding a Certificate of Public Convenience and Necessity issued by the Department of Transportation to conduct scheduled services over specified routes and a limited amount of nonscheduled operations. (6) Any air operator operating under Federal Aviation Regulation (FAR) Parts 121, 127, or 135.

**Air Carrier Activity Information System (ACAIS)**

Database of revenue passenger enplanement and all-cargo landing data used in the distribution of AIP (Airport Improvement Program) entitlement funds.

**air carrier operations**

Arrivals and departures of air carriers certificated in accordance with Federal Aviation Regulations (FAR) Parts 121 and 127.

**air cleaner**

A device designed to remove airborne contaminants such as dusts, fumes, vapors, gases, etc. from the air.

**air cleaning**

An Indoor Air Quality (IAQ) control strategy to remove various airborne particulates and/or gases from the air. The three types of air cleaning most commonly used are particulate filtration, electrostatic precipitation, and gas sorption.

**air commerce**

Interstate, overseas, or foreign air commerce or the transportation of mail by aircraft or any operation or navigation of aircraft within the limits of any federal airway or any operation or navigation of aircraft which directly affects, or which may endanger safety in, interstate, overseas, or foreign air commerce.

**air conditioning**

A process of treating air to control factors such as temperature, humidity, and cleanliness, and to distribute the air throughout a space to meet the requirements of personal protective equipment.

**air conduction**

With regard to acoustics, the process by which sound is conducted through the air to the inner ear, with the outer ear canal serving as part of the pathway.

**air contaminant**

Any particulate matter, gas, or combination thereof, other than water vapor or natural air.

**air contamination**

Introduction of a foreign substance into the air to make the air impure. *See also* [air contaminant](#).

**air courier service**

Establishments primarily engaged in furnishing air delivery of individually addressed let-

ters, parcels, and packages (generally under 100 pounds), except by the U.S. Postal service. While these establishments deliver letters, parcels, and packages by air, the initial pick-up and the final delivery are often made by other modes of transportation, such as by truck, bicycle, or motorcycle. Separate establishments of air courier companies engaged in providing pick-up and delivery only, drop-off points; or distribution centers are all classified in this industry.

**air curtain**

A method of containing oil spills. Air bubbling through a spill causes an upward water flow that slows the spread of oil. It can also be used to stop fish from entering polluted perforated pipe water.

**Air Defense Identification Zone (ADIZ)**

The area of airspace over land or water, extending upward from the surface, within which the ready identification, location, and control of aircraft are required in the interest of national security. Air Defense Identification Zone (ADIZ) locations and operating and flight plan requirements for civil aircraft operations are specified in Federal Aviation Regulation (FAR) Part 99.

**air density**

The weight of air in pounds per cubic foot. Dry standard air at  $T$  (temperature) = 70°F and  $BP$  (barometric pressure) = 29.92 inch Hg (mercury) has a weight density of 0.075 lbs./cu.ft (pounds per cubic foot). Also referred to as *weight density*.

**air diffuser**

A device designed to transfer atmospheric oxygen into a liquid.

**air dose**

In radiation, a dose of x-rays or gamma rays expressed in roentgens, delivered at a point in free air. In radiological practice, it consists of the radiation of the primary beam and that scattered from surrounding air.

**air drying**

A process to significantly reduce pathogens in solid waste by allowing liquid sludge to drain and/or dry on under-drained sand beds, or paved or unpaved basins in which the sludge is at a depth of nine inches. A minimum of three months is needed, two months of which

temperatures average on a daily basis above zero C.

**air embolism**

A form of decompression sickness in which an air bubble blocks blood flow in a blood vessel.

**air exchange rate**

(1) The number of times that the outdoor air replaces the volume of air in a building per unit time, typically expressed as air changes per hour. (2) The number of times that the ventilation system replaces the air within a room or area within the building.

**air express (reserved priority air freight)**

Freight shipments which are shipped on a guaranteed served flight basis at a premium rate, not to be confused with small package service which is restricted to shipments of 50 pounds or less.

**air filter**

A device for removing particulate matter from air.

**Air Force pediscope**

A system consisting of a pressure-transducing blanket and readout for measuring seat pressure on the ischial tuberosities.

**air glow**

A faint glow of light emitted by excited gases in the upper atmosphere. Air glow is much fainter than the aurora.

**air-handler noise**

That acoustic noise output from heating, ventilation, or air-conditioning fans and ducts. Also known as *air-blower noise*.

**air-handling unit (AHU)**

Refers to the ventilation equipment in heating, ventilation, and air-conditioning (HVAC) systems.

**air horsepower**

The theoretical horsepower required to drive a fan if there were no losses in the fan's efficiency (i.e., the fan is operating at 100% efficiency).

**air infiltration**

The uncontrolled leakage of air into a building through cracks, open windows, holes, etc. when the building is under negative pressure and/or as a result of the influence of wind or temperature differences.

**air-line respirator**

A respiratory protective device that is supplied breathing air through a hose line.

**air lock**

A system of enclosures or doors which prevent the transfer of air between one area and an adjacent one.

**air, makeup**

Air that replaces other air exhausted from a space. Insufficient makeup air is one possible cause of insufficient exhaust airflow.

**air mass**

A widespread body of air that gains certain meteorological or polluted characteristics, such as a heat inversion or smog while set in one location. The characteristics can change as it moves away.

**air mass thunderstorm**

A thunderstorm produced by local convection within an unstable air mass.

**air mass weather**

A persistent type of weather that may last for several days (up to a week or more). It occurs when an area comes under the influence of a particular air mass.

**air mode**

See *aviation mode*.

**air monitoring**

The sampling for, and measuring of, contaminants in the air. A form of environmental monitoring in which one or more quantities of environmental gases are taken and a determination of contents and proportions made. See also *air sampling*.

**Air Movement and Control Association (AMCA)**

An association which establishes performance classes for various types of fans.

**air mover**

Any type of device that is used to transfer air from one space/area to another.

**air navigation facility**

Any facility used in, available for use in, or designed for use in aid of air navigation, including landing areas, lights, any apparatus or equipment for disseminating weather information, for signaling, for radio-directional finding, or for radio or other electrical communication, and any other structure or mecha-

nism having a similar purpose for guiding or controlling flight in the air or the landing and takeoff of aircraft. *See also navigational aid.*



*Although a U.S. Landmark, the Arch in St. Louis is considered a hazard to air navigation*

**air navigation hazard**

An object which, as a result of an aeronautical study, the Federal Aviation Administration (FAA) determines will have an adverse effect upon the safe and efficient use of navigable airspace by aircraft, operation of air navigation facilities, or existing or potential airport capacity.

**air operator**

A person or organization authorized to operate aircraft or aviation facilities under Federal Aviation Regulation (FAR) Parts 91, 121, 125, 127, 129, 133, 135, or 137.

**air parcel**

*See parcel of air.*

**air pollutant**

(1) Any air pollution agent or combination of such agents, including any physical, chemical, biological, radioactive (including source material, special nuclear material, and byproduct material) substance or matter which is emitted into or otherwise enters the ambient air. Such term includes any precursors to the formation of any air pollutant, to the extent the EPA Administrator has identified such precursor or precursors for the particular purpose for

which the term “air pollutant” is used. (2) Any substance in air which could, if in high enough concentration, harm man, other animals, vegetation, or material. Pollutants may include almost any natural or artificial composition of matter capable of being airborne. They may be in the form of solid particles, liquid droplets, gases, or in combinations of these forms. Generally, they fall into two main groups: those emitted directly from identifiable sources, and those produced in the air by interaction between two or more primary pollutants, or by reaction with normal atmospheric constituents, with or without photoactivation. Exclusive of pollen, fog, and dust, which are of natural origin, about 100 contaminants have been identified and fall into these categories: solids, sulfur compounds, volatile organic chemicals, nitrogen compounds, oxygen compounds, halogen compounds, radioactive compounds, and odors. (3) Any substance in air that could, in high concentration, harm people, animals, or vegetation, or damage non-living material. Such pollutants may be from solid particles, liquid droplets, gases, or any combination of these. (4) Dust, fume, mist, smoke or other aerosol, gas, odorous substance, or any combination of these which is emitted into the air or otherwise enters the ambient air.

**air pollution**

(1) Any undesirable substance mixed with open air. (2) The presence of contaminant or pollutant substances in the air that do not disperse properly and interfere with human health or welfare, or produce other harmful environmental effects (EPA). (4) The presence of an unwanted material in the air, such as dusts, vapors, smoke, etc., in sufficient concentration to affect the comfort, health, or welfare of residents or damage property exposed to the contaminated air. The deterioration of the quality of the air that results from the addition of impurities.

**Air Pollution Control Agency**

Under the Federal Clean Air Act (CAA). (1) A single state agency designated by the Governor of that state as the official state air pollution control agency for the purposes of the CAA. (2) An agency established by two or more States and having substantial powers or duties pertaining to the prevention and control

of air pollution. (3) A city, county, or other local government health authority, or in the case of any city, county, or other local government in which there is an agency other than the health authority charged with responsibility for enforcing ordinances or laws relating to the prevention and control of air pollution. (4) An agency of two or more municipalities located in the same state or in different states and having substantial powers or duties pertaining to the prevention and control of air pollution. (5) An agency of an Indian tribe.

**air pollution episode**

A period of abnormally high concentration of air pollutants, often due to low winds and temperature inversion, that can cause illness and/or death.

**air pressure**

See *atmospheric pressure*.

**air-purifying canister**

An air-tight module containing absorptive and/or adsorptive substances for use in an air purifier.



*Typical air-purifying respirator with cartridges installed*

**air-purifying respirator**

A device worn by an individual that filters the air to be breathed and returns it to an accept-

able state. Also known as *chemical cartridge respirators*, this type of respirator relies on the person's own breathing force to draw air through the filter medium, or it may utilize a powered blower to provide breathing air (i.e., a powered air-purifying respirator or PAPR). When external air is the only source of breathing air (i.e., no powered air supply is used), then this type of respiratory protection cannot be used in oxygen deficient atmospheres. It is a filter only, and subsequently, the air being filtered must have an oxygen content of at least 19.5%.

**air quality control region (AQCR)**

An area designated by the federal government in which communities share a common air pollution problem (sometimes several states are involved).

**air quality criteria**

The levels of pollution and lengths of exposure above which adverse health and welfare effects may occur.

**air quality-related value (AQRV)**

A value referring to the reduction in the visibility that may be caused by a new air emission.

**air quality standards**

The level of pollutants prescribed by regulations that may not be exceeded during a specified time in a defined area.

**air rights**

The right to use all or a portion of the air space above real estate. Such right is vested by grant (e.g., fee simple, lease, or other conveyance). While commercial airlines have a right to fly over one's land, if such "flight paths" interfere with the owner's use of such land, the owner is entitled to recover the extent of actual damage suffered by him/her. On the other hand, the owner of the land is precluded by state and federal laws from polluting the air.

**air route surveillance radar (ARSR)**

Air Route Traffic Control Center (ARTCC) radar used primarily to detect and display an aircraft's position while en route between terminal areas. The ARSR enables controllers to provide radar air traffic control service when aircraft are within the ARSR coverage. In some instances, ARSR may enable an Air Route Traffic Control Center (ARTCC) to



provide terminal radar services similar to but usually more limited than those provided by a radar approach control.

**Air Route Traffic Control Center (ARTCC)**

A facility established to provide air traffic control service to aircraft operating on an Instrument Flight Rules (IFR) flight plan within controlled airspace and principally during the en route phase of flight. When equipment capabilities and controller workload permit, certain advisory and assistance services may be provided to Visual Flight Rules (VFR) aircraft.

**air sampling**

The collection of samples of air to determine the presence of and the concentration of a contaminant, such as a chemical, aerosol, radioactive material, airborne microorganism, or other substance by analyzing the collected sample to determine the amount present and calculating the concentration based on the sample volume.

**air scour**

The agitation of granular filter media with air during the filter backwash cycle.

**air, standard**

Dry air at 70°F (21°C) and 29.92 inches of mercury barometric pressure. It is equivalent to 0.075 pounds per cubic foot.

**air stripper**

The process of removing volatile and semi-volatile contaminants from liquid; air and liquid are passed simultaneously through a packed tower.

**air-supplied respirator**

A respiratory protective device that provides a supply of breathable air from a source outside the contaminated work area. Includes airline respirators and self-contained respirators.

**air-supply device**

A hand- or motor-operated blower for a hose-mask type respirator, or a compressor or other source of respirable air (e.g., breathing air cylinder) for the air-line respirator.

**air taxi**

(1) A classification of air carriers, which transports, in accordance with Federal Aviation Regulations (FAR) Part 135, persons, property, and mail using small aircraft (under 30 seats or a maximum payload capacity of

7,500). (2) Used to describe a helicopter/Vertical Takeoff and Landing (VTOL) aircraft movement conducted above the surface but normally not above 100 feet above ground level. The aircraft may proceed either via hover taxi or fly at speeds of more than 20 knots. The pilot is solely responsible for selecting a safe airspeed/altitude for the operation being conducted. (3) A classification of air carriers which directly engages in the air transportation of persons, property, mail, or in any combination of such transportation and which do not directly or indirectly use large aircraft (over 30 seats or a maximum payload capacity of more than 7,500 pounds) and do not hold a Certificate of Public Convenience and Necessity or economic authority issued by the Department of Transportation. (4) An air taxi operator that a) performs at least five round trips per week between two or more points and publishes flight schedules which specify the times, days of the week and places between which such flights are performed; or b) transports mail by air pursuant to a current contract with the U.S. Postal Service. (5) An air carrier certificated in accordance with FAR Part 135 and authorized to provide, on demand, public transportation of persons and property by aircraft. Generally operates small aircraft "for hire" for specific trips.

**air taxi/commercial operator (ATCO)**

Commercial air carrier operating on-demand air taxi services on aircraft. Certificated in accordance with Federal Aviation Regulation Part 135.

**air taxi survey**

Federal Aviation Administration (FAA) form 1800-31, sent to carriers for reporting of air taxi/commercial operator (ATCO) activity.

**air titration**

A field analytical method involving the use of an impinger or bubble to draw air through a liquid reagent that changes color in direct proportion to the concentration of the contaminant in the air. Not as precise as laboratory methods.

**air-to-cloth ratio**

The ratio of the volumetric flow rate of a gas to be filtered to the fabric area of the filter.

**air toxins**

Chemical compounds that have been established as hazardous to human health. Also re-

ferred to as hazardous volatile organic compounds, including hydrocarbons such as benzene, halohydrocarbons such as carbon tetrachloride, nitrogen compounds such as amines, oxygen compounds such as ethylene oxide, and others.

**air traffic**

Aircraft operating in the air or on an airport surface, exclusive of loading ramps and parking areas. *Also referred to as **airport traffic**.*

**air traffic clearance**

An authorization by air traffic control, for the purpose of preventing collision between known aircraft, for an aircraft to proceed under specified traffic conditions within controlled airspace.

**air traffic command and control center (ATCCC)**

An Air Traffic Operations service facility consisting of four operational units: 1) *Central Flow Control Function (CFCF)*. Responsible for coordination and approval of all major inter-center flow control restrictions on a system basis in order to obtain maximum utilization of the airspace. 2) *Altitude Reservation Concept*. Responsible for coordinating, planning, and approving special user requirements. 3) *Airport Reservation Office (ARO)*. Responsible for approving Instrument Flight Rules (IFR) flights at designated high-density traffic airports (John F. Kennedy, LaGuardia, O'Hare and Washington National) during specified hours. 4) *Air Traffic Control (ATC) Contingency Command Post*. A facility that enables the Federal Aviation Administration (FAA) to manage the ATC system when a significant portion of the system's capabilities has been lost or threatened.

**air traffic control (ATC)**

(1) Service operated by an appropriate authority to promote the safe, orderly, and expeditious flow of air traffic. (2) The safety separation process to prevent collisions between aircraft and collisions with obstructions while expediting and maintaining an orderly flow of air traffic; an element of the air traffic management process.

**air traffic control clearance**

Authorization for an aircraft to proceed under conditions specified by an air traffic control unit.

**air traffic control facility**

A facility which provides air traffic control services located in the U.S., its possessions and territories, and in foreign countries especially established by international agreement.

**air traffic control service**

A service provided for the purpose of 1) Preventing collisions between aircraft and on the maneuvering area between aircraft and obstructions, and 2) Expediting and maintaining an orderly flow of air traffic.

**air traffic controller**

(1) A certified individual responsible for regulating aircraft traffic within a specified region. (2) A person authorized to provide air traffic control service. *Also referred to as **air traffic control specialist, controller, and final controller**.*

**air traffic hub**

Air traffic hubs are not airports; they are the cities and Standard Metropolitan Statistical Areas requiring aviation services. The hubs fall into four classes as determined by each community's percentage of the total enplaned passengers, all services, and all operations of U.S. certificated air carriers in the 50 states, the District of Columbia, and other U.S. areas designated by the Federal Aviation Administration. Large: a community enplaning 1.00% or more of the total enplaned passengers; Medium: 0.25% to 0.99%; Small: 0.05% to 0.24%; Nonhub: Less than 0.05%.

**air traffic liabilities**

The value of transportation sold, but not used or refunded (i.e., liabilities to passengers or liabilities to others. These include payables to other airlines for portions of interline passenger trip amounts the ticketing carrier owes the performing carrier. Also included are amounts the ticketing carrier owes to passengers prior to flights, which remain unearned revenue until air transportation is provided).

**air traffic management (ATM)**

The process used to ensure the safe, efficient, and expeditious movement of aircraft during all phases of operations. Air traffic management consists of air traffic control and traffic flow management.

**air traffic service**

A generic term meaning: 1) Flight Information Service; 2) Alerting Service; 3) Air Traf-

fic Advisory Service; 4) Air Traffic Control Service, Area Control Service, Approach Control Service, or Airport Control Service.

**air transport movements**

Landing and takeoff of an aircraft operating a scheduled or non-scheduled service.

**air transportation**

(1) Interstate, overseas, or foreign air transportation or the transportation of mail by aircraft. (2) Includes establishments that provide domestic and international passenger and freight services, and establishments that operate airports and provide terminal facilities. Also included are flying services such as crop dusting and aerial photography.

**air travel club**

An operator certificated in accordance with Federal Aviation Regulation (FAR) Part 123 to engage in the carriage of members who qualify for that carriage by payment of an assessment, dues, membership fees, or other similar remittance.

**air travel insurance**

A form of life insurance which may be purchased by air travelers according to the terms of which the face value of the policy is paid to the named beneficiary in the event of death resulting from a particular flight. *See also insurance.*

**air waybill**

A bill of lading which covers both domestic and international flights transporting goods to a specified destination. Technically, it is a non-negotiable instrument of air transport which serves as a receipt for the shipper, indicating that the carrier has accepted the goods listed therein and obligates itself to carry the consignment to the airport of destination according to specified conditions.

**airbag**

A device which is pressurized to inflate on impact to protect the occupant in a vehicle.

**airborne asbestos sample**

A sample that has been collected in a prescribed manner for determining the concentration of asbestos fibers or structures in the air by a specific analytical method.

**airborne dust**

Airborne particulates, including the total dust and the respirable dust, present in the air.

**airborne particulates**

Total suspended particulate matter found in the atmosphere as solid particles or liquid droplets. The chemical composition of particulates varies widely, depending on location and time of year. Airborne particulates include windblown dust, emissions from industrial process, smoke from burning of wood and coal, and exhaust of motor vehicles.

**airborne pathogen**

A disease-causing microorganism which is transported through the ambient air or on particles present in the air.

**airborne radioactive material**

Radioactive material dispersed in the air in the form of a dust, fume, mist, vapor, gas, or other form.

**airborne release**

The release of any chemical into the air.

**Airbus Industries Group (AIG)**

A supernational management organization responsible for design, development, manufacture, marketing, sales and support of selected commercial aircraft.

**aircraft**

(1) All airborne vehicles supported either by buoyancy or by dynamic action. Used in a restricted sense to mean an airplane, any winged aircraft, including helicopters but excluding gliders and guided missiles. (2) Device(s) that are used or intended to be used for flight in the air. When used in air traffic control terminology may include the flight crew. *See also [airframe](#), [airplane](#), and [airship](#).*

**aircraft accident**

Occurrence incident to flight in which, as a result of the operation of an aircraft, any person (occupant or non-occupant) receives fatal or serious injury or any aircraft receives substantial damage. Substantial damage means: a) damage or failure which adversely affects the structural strength, performance, or flight characteristics of the aircraft, and would normally require major repair or replacement of the affected component; b) engine failure, damage limited to an engine, bent fairings or cowling, dented skin, small punctured holes in the skin or fabric, ground damage to rotor or propeller blades. Damage to landing gear, wheels, tires, flaps, engine accessories, brakes,



or wing tips is not considered "substantial damage." See also [accident](#).

#### **aircraft accident incident rate (AIR)**

A measure of the safety of flying, represented by the formula

$$AIR = \frac{\text{number aircraft accidents} \times 100,000}{\text{number of flight hours}}$$

#### **aircraft agreement (Agreement On Trade In Civil Aircraft)**

Negotiated in the Tokyo Round of the Multilateral Trade Negotiations, and implemented January 1, 1980, providing for elimination of tariff and non-tariff trade barriers in the civil aircraft sector.

#### **aircraft and traffic servicing expenses**

Compensation of ground personnel, in-flight expenses for handling and protecting all non-passenger traffic including passenger baggage, and other expenses incurred on the ground to a) protect and control the in-flight movement of aircraft, b) schedule and prepare aircraft operational crews for flight assignment, c) handle and service aircraft while in line operation, and d) service and handle traffic on the ground after issuance of documents establishing the air carrier's responsibility to provide air transportation.

#### **aircraft approach category**

A grouping of aircraft based on 1.3 times their stall speed in landing configuration at maximum certified landing weight, as follows:

*Category A:* Speed less than 91 knots.

*Category B:* Speed 91 knots or more but less than 121 knots.

*Category C:* Speed 121 knots or more but less than 141 knots.

*Category D:* Speed 141 knots or more but less than 166 knots.

*Category E:* Speed 166 knots or more.

#### **aircraft contact**

Aircraft with which the Flight Service Stations (FSS) have established radio communications contact. One count is made for each en route, landing, or departing aircraft contacted by an FSS regardless of the number of contacts made with an individual aircraft during the same flight. A flight contacting five FSSs would be counted as five aircraft contacted.

#### **aircraft departure**

An aircraft takeoff made at an airport.

#### **aircraft engine**

An engine that is used or intended to be used for propelling aircraft. It includes turbo-superchargers, appurtenances, and accessories necessary for its functioning, but does not include propellers.

#### **aircraft facility**

An area where aircraft can takeoff and land, usually equipped with associated buildings and facilities. See also [airport](#) and [heliport](#).

#### **aircraft incident**

An occurrence, other than an accident, associated with the operation of an aircraft that affects or could affect the safety of operations and that is investigated and reported on FAA Form 8020-5.

#### **aircraft industry**

Industry primarily engaged in the manufacture of aircraft, aircraft engines, and parts including propellers and auxiliary equipment.

#### **aircraft miles**

The distance flown by aircraft in terms of great circle airport-to-airport distances measured in statute miles.

#### **aircraft miles scheduled**

The sum of the airport-to-airport distances of all flights scheduled, excluding those operated only as extra sections to accommodate traffic overflow.

#### **aircraft operations**

The airborne movement of aircraft in controlled or non-controlled airport terminal areas, and counts at en route fixes or other points where counts can be made.

#### **aircraft revenue departures performed**

The number of aircraft takeoffs actually performed in scheduled passenger/cargo and all-cargo services.

#### **aircraft revenue hours**

The airborne hours in revenue service, computed from the moment an aircraft leaves the ground until it touches the ground again.

#### **aircraft revenue mile**

The miles (computed in airport-to-airport distances) for each inter-airport hop actually completed in revenue service, whether or not performed in accordance with the scheduled

pattern. For this purpose, operation to a flag stop is a hop completed even though a landing is not actually made. In cases where the inter-airport distances are inapplicable, aircraft miles flown are determined by multiplying the normal cruising speed for the aircraft type by the airborne hours.

#### **aircraft type**

(1) A term used in a number of Federal Aviation Administration (FAA) publications in grouping aircraft by basic configuration: fixed-wing, rotorcraft, glider, dirigible, and balloon. (2) A distinctive model of an aircraft as designated by the manufacturer.

#### **airflow**

The volumetric rate at which air flows through a space, usually measured in cubic feet per minute (CFM) or cubic meters per second (CMS). Also, the speed at which air moves through a space, usually measured in feet per minute or meters per second.

#### **airfoil sill/jamb**

Tapered openings on the bottom (sill) and sides (jamb) of laboratory type hoods.

#### **airframe**

(1) The fuselage, booms, nacelles, cowlings, fairings, airfoil surfaces (including rotors but excluding propellers and rotating airfoils of engines), and landing gear of an aircraft and their accessories and controls. (2) Structural components of an airplane, such as fuselage, empennage, wings, landing gear, and engine mounts, but excluding such items as engines, accessories, electronics, and other parts that may be replaced from time to time. *See also* [aircraft](#), [airplane](#), and [airship](#).

#### **airlift**

A device for pumping liquid by injecting air at the bottom of a riser pipe submerged in the liquid to be pumped.

#### **airline transport pilot**

An individual who has been trained and has demonstrated proficiency in the operation of aircraft of a specific category and classification. An airline transport pilot may act as a pilot-in-command of an aircraft engaged in air carrier service.

#### **airman**

A pilot, mechanic or other licensed aviation technician.

#### **airman certificate**

A document issued by the Administrator of the Federal Aviation Administration (FAA) certifying that the holder complies with the regulations governing the capacity in which the certificate authorizes the holder to act as an airman in connection with aircraft. *See also* [airman](#).

#### **Airman's Information Manual**

*See* [Aeronautical Information Manual](#).

#### **Airman's Meteorological Information (AIRMET)**

In-flight weather advisories issued only to amend the area forecast concerning weather phenomena which are of operational interest to all aircraft and potentially hazardous to aircraft having limited capability because of lack of equipment, instrumentation, or pilot qualifications. AIRMETs concern weather of less severity than that covered by Significant Meteorological Convective Information's (SIGMET) or Convective SIGMETs. AIRMETs cover moderate icing, moderate turbulence, sustained winds of 30 knots or more at the surface, widespread areas of ceilings less than 1,000 feet and/or visibility less than 3 miles, and extensive mountain obstructions.

#### **AIRMET**

*See* [Airman's Meteorological Information](#).

#### **airplane**

An engine-driven fixed-wing aircraft heavier than air, that is supported in flight by the dynamic reaction of the air against its wings. *See also* [aircraft](#), [airframe](#), and [airship](#).

#### **airplane design group**

A grouping of airplanes based on wingspan as follows:

*Design Group I:* A wingspan up to but not including 49 feet (15m).

*Design Group II:* A wingspan 49 feet (15m) up to but not including 79 feet (24m).

*Design Group III:* A wingspan 79 feet (24m) up to but not including 118 feet (36m).

*Design Group IV:* A wingspan 118 feet (36m) up to but not including 171 feet (52m).

*Design Group V:* A wingspan 171 feet (52m) up to but not including 214 feet (65m).

*Design Group VI:* A wingspan 214 feet (65m) up to but not including 262 feet (80m).

### **airport**

(1) An area of land or water that is used or intended to be used for the landing and take-off of aircraft, and includes its buildings and facilities, if any. (2) Facility used primarily by conventional, fixed-wing aircraft. (3) A facility, either on land or water, where aircraft can take off and land. Usually consists of hard-surfaced landing strips, a control tower, hangars and accommodations for passengers and cargo. (4) A landing area regularly used by aircraft for receiving discharging passengers or cargo. *See also aerodrome, aircraft facility, and heliport.*

### **airport acceptance rate (AAR)**

A dynamic input parameter specifying the number of arriving aircraft which an airport or airspace can accept from the Air Route Traffic Control Center per hour. The AAR is used to calculate the desired interval between successive arrival aircraft.

### **airport advisory area**

The area within ten miles of an airport without a control tower or where the tower is not in operation, and on which a Flight Service Station is located.

### **airport advisory service**

A service provided by flight service stations at airports not served by a control tower. This service consists of providing information to arriving and departing aircraft concerning wind direction/speed-favored runway, altimeter setting, pertinent known traffic/field conditions, airport taxi routes/traffic patterns, and authorized instrument approach procedures. This information is advisory in nature and does not constitute an Air Traffic Control (ATC) clearance.

### **airport and airways trust fund**

Mechanism for funding capital improvements for the nation's air traffic control system and airports. The fund is supported by taxes contributed by users of the aviation system, including an 10 percent tax of airline passengers and a tax on aviation fuel. Established by the Airport and Airway Revenue Act of 1970.

### **airport elevation**

The highest point on an airport's usable runways, expressed in feet above mean sea level.

### **airport/facility directory**

A publication designed primarily as a pilot's operational manual containing all airports, seaplane bases, and heliports open to the public including communications data, navigational facilities, and certain special notices and procedures. This publication is issued in seven volumes, according to geographical area.

### **airport improvement program (AIP)**

Provides funding from the Airport and Airway Trust Fund for airport development, airport planning, noise compatibility planning, and to carry out noise compatibility programs. *See also airport and airway trust fund.*

### **airport information desk**

An airport unmanned facility designed for pilot self-service briefing, flight planning, and filing of flight plans.

### **airport layout plan (ALP)**

The plan of an airport showing the layout of existing and proposed airport facilities.

### **airport lighting**

(1) *General.* Various lighting aids that may be installed on an airport. (2) *Runway Lights/Runway Edge Lights.* Lights having a prescribed angle of emission used to define the lateral limits of a runway. Runway lights are uniformly spaced at intervals of approximately 200 feet, and the intensity may be controlled or preset.

### **airport marking aids**

Markings used on runway and taxiway surfaces to identify a specific runway, a runway threshold, a centerline, a hold line, etc. A runway should be marked in accordance with its present usage such as a) visual, b) non-precision instrument, or c) precision instrument.

### **airport noise**

That environmental noise in the vicinity of an airport due primarily to engine noise from approaching and departing aircraft.

### **airport operations**

The number of arrivals and departures from the airport at which the airport traffic control

tower is located. There are two types of operations: local and itinerant.

**airport reference point (ARP)**

The latitude and longitude of the approximate center of the airport.

**airport reservation office (ARO)**

Office responsible for monitoring the operation of the high density rule. Receives and processes requests for Instrument Flight Rules (IFR) operations at high density traffic airports.

**airport runway centerline lighting**

Flush centerline lights spaced at 60-foot intervals beginning 76 feet from the landing threshold and extending to within 75 feet of the opposite end of the runway.

**airport runway end identifier lighting (REIL)**

Two synchronized flashing lights, one on each side of the runway threshold, which provide rapid and positive identification of the approach end of a particular runway.

**airport surface detection equipment (ASDE)**

Radar equipment specifically designed to detect all principal features on the surface of an airport, including aircraft and vehicular traffic, and to present the entire image on a radar indicator console in the control tower. Used to augment visual observation by tower personnel of aircraft and/or vehicular movements on runways and taxiways.

**airport surveillance radar (ASR)**

Approach control radar used to detect and display an aircraft's position in the terminal area. ASR provides range and azimuth information but does not provide elevation data. Coverage of the ASR can extend up to 60 miles. *See also ground controlled approach and precision approach radar.*

**airport taxi charts**

Designed to expedite the efficient and safe flow of ground traffic at an airport. These are identified by the official airport name (e.g., Orlando International Airport).

**airport threshold lighting**

Fixed green lights arranged symmetrically left and right of the runway centerline, identifying the runway threshold.

**airport touchdown zone lighting**

Two rows of transverse light bars located symmetrically about the runway centerline normally at 100 foot intervals. The basic system extends 3,000 feet along the runway.

**airport traffic**

Aircraft operating in the air or on an airport surface exclusive of loading ramps and parking areas. *See also air traffic.*

**airport traffic control service**

Air traffic control service provided by an airport traffic control tower for aircraft operating on the movement area and in the vicinity of an airport.

**airport traffic control tower (ATCT)**

(1) A central operations facility in the terminal air traffic control system, which consists of a tower cab structure, including an associated IFR room if radar equipped, and uses air/ground communications, radar, visual signaling, and other services to provide safe and expeditious movement of terminal air traffic. (2) A terminal facility that uses air-ground radio communications, visual signaling, and other devices to provide air traffic control (ATC) services to aircraft operating in the vicinity of an airport or on the movement area. Authorizes aircraft to land or takeoff at the airport controlled by the tower or to transit the airport traffic area regardless of flight plan or weather conditions (instrument flight rules [IFR] or visual flight rules [VFR]). A tower may also provide approach control services.

**airport visual approach slope indicator lighting (VASI)**

An airport lighting facility providing vertical visual approach slope guidance to aircraft during approach to landing by radiating a directional pattern of high intensity red and white focused light beams which indicate to the pilot that he is "on path" if he sees red/white, "above path" if white/white, and "below path" if red/red. Some airports serving large aircraft have three-bar VASI which provide two visual glide paths to the same runway.

**airports, flying fields, and airport terminal services**

Establishments primarily engaged in operating and maintaining airports and flying fields; in servicing, repairing (except on a factory ba-

sis), maintaining and storing aircraft; and in furnishing coordinated handling services for airfreight or passengers at airports. This industry also includes private establishments primarily engaged in air traffic control operations.

### **Airports Grants In Aid Program**

A grant of funds by the Secretary of Transportation under the Airport & Airway Improvement Act of 1982 to a sponsor for the accomplishment of one or more projects.

### **airports of entry**

Aircraft may land at these airports without prior permission to land from U.S. Customs.

### **airship**

An engine-driven lighter-than-air aircraft that can be steered. *See also* [aircraft](#), [airframe](#), and [airplane](#).

### **airspace hierarchy**

Within the airspace classes, there is a hierarchy and, in the event of an overlap of airspace: Class A preempts Class B, Class B preempts Class C, Class C preempts Class D, Class D preempts Class E, and Class E preempts Class G.

### **airspeed**

The speed of an aircraft relative to its surrounding air mass. The unqualified term "airspeed", means one of the following: (1) *Indicated airspeed*. The speed shown on the aircraft airspeed indicator. This is the speed used in pilot/controller communications under the general term "airspeed." (2) *True airspeed*. The airspeed of an aircraft relative to undisturbed air. Used primarily in flight planning and en route portion of flight. When used in pilot/controller communications, it is referred to as "true airspeed" and not shortened to "airspeed."

### **airspeed indicator**

An aircraft display showing velocity relative to the surrounding air.

### **airspeed/mach indicator (AMI)**

*See* [airspeed indicator](#) and [mach indicator](#).

### **airstart**

The starting of an aircraft engine while the aircraft is airborne, preceded by engine shutdown during training flights or by actual engine failure.

### **airway**

(1) *Anatomy*. The pathway through which air and other respiratory gases pass between the mouth or nostrils and the lung alveoli. (2) *Aviation*. A Class E airspace area established in the form of a corridor, the centerline of which is defined by radio navigational aids.

### **airway beacon**

*Aviation*. Used to mark airway segments in remote mountain areas. The light flashes Morse Code to identify the beacon site.

### **airway resistance**

That resistance which must be overcome for air to flow through the airway.

### **AISC**

American Institute of Steel Construction.

### **AISI**

American Iron and Steel Institute.

### **aitken nuclei**

*See* [condensation nuclei](#).

### **akimbo span**

*See* [span akimbo](#).

### **akinesia**

A movement disorder in which the person executes no voluntary movements or exhibits a pause prior to initiation of a movement.

### **AL**

Action level.

### **alabaster**

A compact, fine-grained gypsum material.

### **Alachlor**

A herbicide, marketed under the trade name Lasso, used mainly to control weeds in corn and soybean fields.

### **Alar**

Trade name for daminozide, a pesticide that makes apples redder, firmer, and less likely to drop off trees before growers are ready to pick them. It is also used to a lesser extent on peanuts, tart cherries, concord grapes, and other fruits.

### **ALARA**

*See* [as low as reasonably achievable](#).

### **alarm**

An indicator that some condition exists which may or will require human action to correct in

order to prevent loss of life, property, or equipment.

**alarm set point**

The selected concentration at which an instrument is set to alarm.

**albedo**

The percent of radiation returning from a surface compared to that which strikes it.

**albumin**

A member of a class of water-soluble proteins that are found in the juices and tissues of animals, in the white or clear part of eggs, and in vegetables, and that contain sulfur, oxygen, hydrogen, carbon, and nitrogen.

**albuminuria**

Presence of serum albumin in the urine.

**alcohol**

An organic compound synthesized from petroleum or natural products or derived from a fermentation process. Widely used as a solvent and for chemical syntheses.

**alcohol concentration (AC)**

The concentration of alcohol in a person's blood or breath. When expressed as a percentage it means grams of alcohol per 100 milliliters of blood or grams of alcohol per 210 liters of breath.

**alcohol involvement**

A fatality or fatal crash as alcohol-related or alcohol involved if (1) Either a driver or a non-motorist (usually a pedestrian) had a measurable or estimated blood alcohol concentration (BAC) of 0.01 grams per deciliter (g/dl) or above. Probabilities of alcohol involvement are now calculated for each driver, pedestrian, or crash. (2) Coded by police when evidence of alcohol is present. This code does not necessarily mean that a driver, passenger or non-occupant was tested for alcohol.

**alcoholic**

Containing or pertaining to alcohol; a person addicted to alcohol.

**alcoholism**

Drunkenness, or long-continued, excessive consumption of alcohol. Generally refers to chronic alcoholism.

**aldehyde**

A class of organic compounds containing a CHO group, including formaldehyde and acetaldehyde.

**alderman**

Municipal officer; member of the legislative body of a municipality. Often called *councilman*.

**Aldicarb**

An insecticide sold under the trade name Temik. It is made from ethyl isocyanate.

**alert notice**

*Aviation.* A request originated by a Flight Service Station (FSS) or an air route traffic control center (ARTCC) for an extensive communication search for overdue, unreported, or missing aircraft. Also known as *alnot*.

**alerting service**

*Aviation.* A service provided to notify appropriate organizations regarding aircraft in need of search and rescue aid, and assist such organizations as required.

**Aleutian low**

The subpolar low-pressure area that is centered near the Aleutian Islands on charts that show mean sea-level pressure.

**algae**

Simple rootless plants that grow in sunlit waters in relative proportion to the amounts of nutrients available. They can affect water quality adversely by lowering the dissolved oxygen in the water. They are food for fish and small aquatic animals.

**algae blooms**

Sudden spurts of algae growth, which can affect water quality adversely and indicate potentially hazardous changes in local water chemistry.

**algaecide**

Any substance used to kill algae. Also spelled *algicide*.

**algorithm**

An accepted procedure that has been developed for the purpose of solving a specific problem.

**alimentary canal**

All the organs making up the route taken by food as it passes through the body from the



mouth to the anus. Also called the *digestive tract*.

### **aliphatic hydrocarbon**

One of the major groups of organic compounds characterized by a straight- or branched-chain arrangement of carbon atoms. This group is composed of three subgroups: *alkanes* (paraffins), which are saturated and relatively unreactive; *alkenes*, which contain double bonds and are reactive; and, *alkynes* (acetylenes), which contain triple bonds and are highly reactive.

### **aliquot**

A part which is a definite fraction of the whole, such as an aliquot of a sample for analysis.

### **alkali**

A compound that has the ability to neutralize an acid and form a salt. Any substance which in water solution is bitter, more or less irritating or caustic to the skin, turns litmus blue, and has a pH value greater than 7. *See also base*.

### **alkali-ash diet**

A therapeutic diet prescribed to dissolve uric acid and cystine urinary calculi. This type of diet changes the urinary pH so that certain salts are kept in solution and excreted in the urine. Emphasis is placed on fruits, vegetables, and milk. Meat, eggs, bread, and cereals are restricted.

### **alkali metals**

The elements lithium, sodium, potassium, rubidium, and cesium.

### **alkaline**

Water containing sufficient amounts of alkalinity to raise the pH above 7.0

### **alkaline soil**

Soil with a pH greater than 7.0.

### **alkalinity**

The ability of a water to neutralize an acid due to the presence of carbonate, bicarbonate, and hydroxide ions.

### **alkaloid**

One of a large group of organic, basic substances found in plants. They are usually bitter in taste and are characterized by powerful physiological activity. Examples are morphine, cocaine, atropine, quinine, nicotine,

and caffeine. The term is also applied to synthetic substances that have structures similar to plant alkaloids, such as procaine.

### **alkalosis**

A pathologic condition resulting from accumulation of base or loss of acid without comparable loss of base in the body, and characterized by a decrease in hydrogen ion concentration (increase in pH). Although the normal pH of the blood is slightly alkaline at 7.4, a drastic shift of the acid-base balance toward alkalinity can produce serious symptoms, including shallow or irregular respiration, prickling or burning sensation in the fingers, toes or lips, muscle cramps and, in severe cases, convulsions. The opposite of alkalosis is *acidosis*.

### **alkylating agent**

A synthetic compound containing two or more end (alkyl) groups that combine readily with other molecules. Their action seems to be chiefly on the deoxyribonucleic acid (DNA) in the nucleus of the cell. They are used in chemotherapy of cancer although they do not damage malignant cells selectively, but also have a toxic action on normal cells. Locally, they cause blistering of the skin and damage to the eyes and respiratory tract. Systemic toxic effects are nausea and vomiting, reduction in both leukocytes and erythrocytes, and hemorrhagic tendencies.

### **all-cargo and mail aircraft**

Movement by aircraft and helicopters operated for commercial transport operations involving freight and/or mail, but not passengers.

### **all-cargo carrier**

(1) One of a class of carriers holding an All-Cargo Air Service Certificate issued under Section 418 of the Federal Aviation Act and certificated in accordance with Federal Aviation Regulations Part 121 to provide domestic air transportation of cargo. (2) An air carrier certificated in accordance with Federal Aviation Regulations (FAR) Part 121 to provide scheduled air freight, express, and mail transportation over specified routes, as well as to conduct nonscheduled operations that may include passengers.

### **all clear**

(1) *Emergency Response*. Term used to indicate the emergency area is secured and it is

safe to reenter the area. (2) *Marine Safety*. Term used in boating to mean a) that a tow boat is ready to leave barge, or b) is clear of an obstruction.

**all-fire level**

The minimum direct current or radio frequency energy that causes initiation of an electroexplosive initiator with a reliability of 0.999 at a confidence level of 95 percent, as determined by a Bruceton test. recommended operating level is all-fire current, as determined by test, at ambient temperature plus 150 percent of the minimum all-fire current. See also *Bruceton test*.

**all-or-none**

Denoting either a complete response to a stimulus by a nerve or muscle, or none at all.

**all-pass**

Pertaining to a condition or piece of equipment in which all frequencies of a signal are processed equivalently without attenuation; also *all pass* and *allpass*.

**all-risk insurance**

Type of insurance policy which ordinarily covers every loss that may happen, except by fraudulent acts of the insured. A type of policy which protects against all risks and perils except those specifically enumerated.

**all services**

*Transportation*. The total of scheduled and nonscheduled transport services.

**allergen**

Any of a wide variety of substances or environmental conditions which may provoke an allergic reaction. Almost any substance in the environment can become an allergen. The list of known allergens (i.e., substances to which individuals have become sensitive) includes plant and tree pollens, spores of mold, animal hairs, dust, foods, feathers, dyes, soaps, detergents, cosmetics, plastics, some valuable medicines, including penicillin, and even sunlight. Allergens can enter the body by being inhaled, swallowed, touched, or injected. The allergen is not directly responsible for the allergic reaction, but sets off the chain of events that brings it about. When a foreign substance enters the body, the system reacts by producing antibodies that attack the substance and render it harmless. When their work is done, the antibodies attach themselves

to tissue surfaces, where they remain in reserve, ready to be called into action if the same substance should enter the body again. Should the substance do so, the antibodies again enter into the immune reaction which is part of the body's valuable natural defense against invading disease germs. Also referred to as *sensitizers*.

**allergic contact dermatitis**

Initial exposure of an individual to a chemical may not cause a problem but will result in the formation of antigens. In some cases, subsequent exposure of the individual to the material results in an inflammatory response, with resulting erythema and edema, which is referred to as an allergic contact dermatitis.

**allergic reaction**

Abnormal response following exposure to a substance by an individual who is hypersensitive to that substance as a result of a previous exposure.

**allergy**

(1) An unusual or exaggerated response to a particular substance in a person sensitive to that substance. (2) The acquired hypersensitivity of an individual to a particular substance. (3) A hypersensitive or pathological reaction by a person to environmental factors or substances, such as pollens, foods, dust, or microorganisms, in amounts that do not affect most people. (4) An abnormal response of a hypersensitive person to a chemical or physical stimulus.

**allesthesia**

The perception of a given peripheral tactile stimulus as occurring at a point different from the actual point of stimulation.

**allopathy**

A method of treating disease by the use of agents producing effects different from those of the disease treated; opposite of *homeopathy*.

**Allotment Management Plan**

Under the Federal Land Policy and Management Act of 1976: A document prepared in consultation with the lessees or permittees involved, which applies to livestock operations on the public lands or on lands within National Forests in the eleven contiguous Western States and which prescribes the manner in, and extent to, which livestock operations will



be conducted in order to meet the multiple-use, sustained yield, economic and other needs and objectives as determined by the Secretary concerned. It also describes the type, location, ownership, and general specifications for the range improvements to be installed and maintained on the lands to meet the livestock grazing and other objectives of land management. It contains such other provisions relating to livestock grazing and other objectives found by the Secretary of the Interior to be consistent with the Federal Land Policy and Management Act of 1976 and applicable law.

**allotropism**

A condition in which an element is present in two or more distinct forms with unlike properties.

**allowable level**

As used in Rule 57 (pursuant to Act 245 of 1929), a discharge level which is acceptable once the discharge has mixed with a specified volume of receiving water (e.g., river or stream).

**allowable load**

See *load limit*.

**allowance**

(1) That specified minimal clearance between two parts which are to be assembled. (2) Some time value or factor by which the normal time required to complete a task is increased to allow for such things as delays, policy, fatigue, or personal needs. Also known as *allowed time* and *time allowance*.

**allowance for depreciation**

Asset valuation account which includes the balance of the offsetting credit to be a capitalized asset value to represent the loss and deterioration in the value of the asset over time, so that the asset is amortized over its useful life, and provisions are made for replacement of the asset at the end of its productive life.

**allowance for uncollectable accounts**

Accruals for estimated losses from uncollectable accounts.

**allowed time**

See *allowance*.

**alloy**

A combination of two or more metals to form an alloy in which the atoms of one metal re-

place or occupy interstitial positions between the atoms of the other metal.

**alluvial soil**

Soil formed of material that was carried by flowing water before being deposited. See also *alluvial stream*.

**alluvial stream**

Any stream whose banks are subject to attack, allowing channel meander. The stream has the property of depositing material such as soil, sand, or gravel and building up land in one area while washing it away in another. See also *alluvial soil*.

**alluvium**

Loose materials (clay, silt, sand, gravel, and larger rocks) washed down from hills and mountains and deposited in low areas.

**alnot**

See *alert notice*.

**aloe**

Medicinal plant that yields a purgative drug, aloin.

**alongside**

The side of the ship. Goods to be delivered "alongside" are to be placed on the dock or lighter within reach of the ship's tackle so that they can be loaded aboard the ship.

**alopecia**

Partial or total loss of hair from natural or abnormal causes.

**ALP**

See *airport layout plan*.

**alpha**

The probability of making a Type I error, represented by the symbol  $\alpha$ . See also *beta*.

**alpha emitter**

A radioactive substance which gives off alpha particles during the decay process. Also referred to as *alpha decay*.

**alpha factor**

The ratio of oxygen transfer coefficients for water and wastewater at the same temperature and pressure; used in the sizing of aeration equipment.

**alphanumeric**

Any letter of the alphabet, numeral, punctuation mark, or other symbolic character.

**alphanumeric display**

Letters and numerals used to show identification (ID), altitude, beacon code, and other information concerning a target on a radar display.

**alpha particle**

A specific particle, consisting of two protons and two neutrons (a helium nucleus) ejected spontaneously from the nuclei of some radioactive elements. It has low penetrating power and short range. Even the most energetic alpha particles will generally fail to penetrate unbroken skin. The danger arises when matter containing alpha-emitting isotopes is introduced into the lungs or intestinal tract.

**alpha radiation**

A stream of alpha particles.

**alpha ray**

A strongly ionizing and weakly penetrating radiation stream of fast-moving helium nuclei.

**alpha rhythm**

A band of the EEG spectrum consisting of frequencies from about 8 Hz to 13 Hz.

**alpha testing**

The preliminary testing phase of a new software product outside the facility or company in which it was developed. *See also* [beta testing](#).

**alpine tundra**

*See* [tundra](#).

**Alquist-Priolo Act**

Zoning act passed in 1972 in response to the 1971 San Fernando earthquake to prevent building across the traces of active faults.

**ALS**

*See* [approach light system](#).

**alternate airport**

An airport at which an aircraft may land if a landing at the intended airport becomes inadvisable.

**alternate method**

Any method of sampling and analyzing for an air pollutant which is not a reference or equivalent method but which has been demonstrated in specific cases to the EPA's satisfaction to produce results adequate for compliance.

**alternating current (AC)**

An electrical current flow which alternates in amplitude about a baseline.

**alternative dispute resolution**

Term refers to procedures for settling disputes by means other than litigation such as arbitration, mediation, or mini-trials. Such procedures, which are usually less costly and more expeditious, are increasingly being used in commercial and labor disputes, divorce actions, in resolving motor vehicle and medical malpractice tort claims, and in other disputes that would likely otherwise involve court litigation.

**alternative energy**

Energy obtained from sources other than traditional fossil fuels or nuclear energy, and which are usually renewable and nonpolluting. Alternative energy sources include solar energy, wave power, geothermal power, and biomass fuels.

**alternative fuel**

*See* [alternative energy](#).

**alternative fuel capacity**

The on-site availability of apparatus to burn fuels other than natural gas.

**alternative input device**

*See* [alternative pointing device](#).

**alternative or innovative treatment technologies**

Under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980: Those technologies, including proprietary or patented methods, which permanently alter the composition of hazardous waste through chemical, biological, or physical means so as to significantly reduce the toxicity, mobility, or volume (or any combination thereof) of the hazardous waste or contaminated materials being treated. The term also includes technologies that characterize or assess the extent of contamination, the chemical and physical character of the contaminants, and the stresses imposed by the contaminants on complex ecosystems at sites.

**alternative pointing device**

A device used to assist in a disabled individual's interaction with a computer. Also known as *alternative input device*.

**alternative work schedule**

Any work schedule other than standard work week.

**altimeter**

An instrument that indicates the altitude of an object above a fixed level (for example, an aircraft above sea level). Pressure altimeters use an aneroid barometer with a scale graduated in altitude instead of pressure.

**altimeter setting**

The barometric pressure reading used to adjust a pressure altimeter for variations in existing atmospheric pressure or to the standard altimeter setting (29.92).

**altitude**

The vertical distance of a level, a point, or an object considered as a point measured in feet above ground level (AGL) or from mean sea level (MSL). 1) *MSL altitude*. Altitude expressed in feet measured from mean sea level. 2) *AGL altitude*. Altitude expressed in feet measured above ground level. 3) *Indicated altitude*. The altitude as shown by an altimeter. On a pressure or barometric altimeter it is altitude as shown uncorrected for instrument error and uncompensated for variation from standard atmospheric conditions.

**altitude encoding**

An aircraft altitude transmitted via the Mode C transponder feature that is visually displayed in 100-foot increments on a ground radar scope having readout capability.

**altitude engine**

A reciprocating aircraft engine having a rated takeoff power that is producible from sea level to an established higher altitude.

**altitude readout**

An aircraft's altitude, transmitted via the Mode C transponder feature, that is visually displayed in 100-foot increments on a radar scope having readout capability.

**altitude reservation (ALTRV)**

Airspace utilization under prescribed conditions normally employed for the mass movement of aircraft or other special requirements which cannot otherwise be accomplished. ALTRVs are approved by the appropriate Federal Aviation Administration (FAA) facility. *See also formation flight.*

**altitude restriction**

An altitude or altitudes, stated in the order flown, which are to be maintained until reaching a specific point or time. Altitude restrictions may be issued by Air Traffic Control (ATC) due to traffic, terrain, or other airspace considerations.

**altitude restrictions are canceled**

Adherence to previously imposed altitude restrictions is no longer required during a climb or descent.

**altitude sickness**

A syndrome caused by exposure to altitude high enough to cause significant hypoxia, or lack of oxygen. At high altitudes, the atmospheric pressure is decreased and consequently arterial oxygen content is also lowered. *Acute altitude sickness* may occur after a few hours' exposure to a high altitude. Mental function may be affected, and there may be lightheadedness and breathlessness. Eventually headache and prostration may occur. Older persons and those with pulmonary or cardiovascular disease are most likely to be affected. After a few hours or days of acclimation, the symptoms will subside. *Chronic altitude sickness* (sometimes referred to as *Monge's disease* or *Andes disease*) occurs in those in the high Andes above 15,000 feet. It resembles *polycythemia*, but is completely relieved if the patient is moved to sea level.

**altocumulus**

A middle cloud, usually white or gray. Often occurs in layers or patches with wavy, rounded masses or rolls.

**altocumulus castellanus**

An altocumulus showing vertical development. Individual cloud elements have tower-like tops, often in the shape of tiny castles (hence the name).

**altostratus**

A middle cloud composed of gray or bluish sheets or layers of uniform appearance. In the thinner regions, the sun or moon usually appears dimly visible.

**ALTRV**

*See altitude reservation.*

**alum**

(1) A substance used, in the form of colorless crystals or white powder, as a styptic or hemostatic because of its astringent action. It also may be given by mouth to induce vomiting. Large doses may cause gastrointestinal disturbances. (2) Common name for aluminum sulfate  $[Al_2(SO_4)_3 \cdot 14H_2O]$ , frequently used as a coagulant in water and wastewater treatment.

**alum sludge**

Sludge resulting from treatment processes where alum is used as a coagulant.

**alumina**

A form of aluminum oxide; chemical formula is  $Al_2O_3$ .

**aluminosis**

A pneumoconiosis that results from the inhalation of aluminum-bearing dusts.

**aluminum**

A lightweight, nonferrous metal with good corrosion resistance and electrical and thermal conductivity.

**aluminum silicates**

Compounds containing aluminum, silica, and oxygen as main constituents.

**alveolar gas exchange**

That gaseous exchange through the thin walls of the alveoli and the capillaries, normally such that oxygen is absorbed by the blood and carbon dioxide is released into the alveolus.

**alveolar pressure**

That combined air and water vapor pressure within an alveolus of the lung.

**alveolar ventilation**

The replenishment of alveolar gases by atmospheric air.

**alveoli**

Plural of alveolus. (1) Numerous small, terminal air sacs in the lungs where pulmonary capillary blood is in close juxtaposition to the alveolar gas, permitting the rapid exchange of carbon dioxide and oxygen in the lungs. There are approximately 300 million alveoli situated at the ends of small air passageways in the lungs. Alveoli are the main deposition site of respirable dust particles (1-10 microns in diameter) or respirable fibers (e.g., asbestos) that can result in various respiratory diseases such as silicosis and asbestosis. (2) The

cavities or sockets of either jaw in which the roots of the teeth are embedded.

**A/m**

Amperes per meter.

**A.M. peak period**

*Federal Transit Association.* The period in the morning when additional services are provided to handle higher passenger volumes. The period begins when normal, scheduled headways are reduced and ends when headways return to normal. *See also P.M. peak period.*

**AMA**

*See American Medical Association.*

**amalgam**

Any mixture or alloy of mercury combined with other metals, such as zinc, gold, silver, or alloys.

**amalgamation**

(1) *Metallurgy.* The alloying of metals with mercury. (2) *Law.* Union of different races, or diverse elements, societies, unions, associations, or corporations, so as to form a homogeneous whole or new body; interfusion; intermarriage; consolidation; merger or coalescence.

**amaurosis**

Partial or complete loss of sight from loss of power in the optic nerve or retina, without any visible defect in the eye except an immovable septum.

**ambassador**

A public officer clothed with high diplomatic powers, commissioned by a government to transact the international business of his/her government with a foreign government.

**ambidextrous**

Having the faculty of using both hands with equal ease and facility.

**ambient**

The surroundings or the area encircled.

**ambient air**

(1) Any unconfined portion of the atmosphere (open air, surrounding air). (2) The surrounding air or atmosphere in a given area under normal conditions. (3) The part of the atmosphere that is external to structures and to which the public has access.

**ambient air quality**

A general term used to describe the quality of the open or ambient air.

**Ambient Air Quality Standards**

See *Criteria Pollutants* and *National Ambient Air Quality Standards*.

**ambient aquatic life advisory concentrations (AALACs)**

The Environmental Protection Agency's advisory concentration limit for acute or chronic toxicity to aquatic organisms.

**ambient noise**

The noise associated with a given environment and composed of the sounds from many sources. It is the total noise energy, or the composite of sounds from many sources in an environment.

**ambient temperature**

The temperature of the medium which surrounds an object.

**ambient water quality criteria (AWQS)**

The Environmental Protection Agency's maximum acute or chronic toxicity concentrations for protection of aquatic life and its uses.

**ambivert**

A person possessing characteristics of both the introvert and the extrovert.

**amblyopia**

Dullness or dimness of eyesight without any apparent defect in the organs; the first stage of amaurosis. See also *amaurosis*.

**ambulance or rescue service**

Establishments primarily engaged in furnishing ambulances or rescue services, except by air, where such operations are primarily within a single municipality, contiguous municipalities, or a single municipality and its suburban areas.

**ambulant**

Able to move from place to place; not confined to a bed.

**ambulatory**

Pertaining to an illness or condition that can be treated while the patient is able to walk about and is not confined to bed.

**ameba**

A member of a genus of protozoa, a one-celled semi-fluid animal. Some species are

parasitic in the human body and cause disease.

**amebic dysentery**

A form of dysentery caused by a protozoan parasite, usually resulting from poor sanitary conditions and transmitted by contaminated food or water. Also referred to as *amoebic dysentery*.

**amelioration**

Improvement of conditions immediately after an accident; the immediate treatment of injuries and conditions which endanger people and/or property.

**amend**

To improve. To change for the better by moving defects of faults. To change, correct, revise.

**amended water**

Water to which a wetting agent has been added to improve its ability to wet a material.

**amendment**

(1) *General*. Change for the better; a removal of faults, or a correction. (2) *Law*. The statement of a change, such as a law, bill, or motion. (3) *Environmental*. Organic material, such as wood chips or sawdust, added to sludge in a composting operation to promote uniform air flow.

**amentia**

Imbecility, idiocy, or dotage; deficiency of mental capacity.

**American Academy of Industrial Hygiene (AAIH)**

A professional society of board-certified industrial hygienists.

**American Arbitration Association**

A national organization of arbitrators from whose panel arbitrators are selected for labor and commercial disputes. The Association has produced a Code of Ethics and Procedural Standards for use and guidance of arbitrators.

**American Association of Occupational Health Nurses (AAOHN)**

An organization dedicated to promoting the field of occupational health nursing, formerly named the American Association of Industrial Nurses. It has numerous chapters at the state level throughout the United States. It pro-

vides board certification in the specialty of occupational health nurses.

**American Bar Foundation**

An outgrowth of the American Bar Association involved with sponsoring and funding projects in legal research, education, and social studies.

**American Board of Industrial Hygiene (ABIH)**

Specialty board whose objective is to improve the practice and educational standards of the profession of industrial hygiene, and that is authorized to certify qualified practitioners in the discipline of industrial hygiene.

**American Conference of Governmental Industrial Hygienists (ACGIH)**

A professional, non-governmental organization founded in 1938, composed of industrial hygienists employed in the government and academia. The ACGIH establishes threshold limit values (TLV) for certain chemicals, and co-sponsors (with the American Industrial Hygiene Association) the annual American Industrial Hygiene Conference. Their primary function is to encourage the exchange of experiences among governmental industrial hygienists, and to collect and make available information of value to their members.

**American Industrial Hygiene Association (AIHA)**

An association of professional industrial hygienists trained in the anticipation, recognition, evaluation, and control of health hazards, and the prevention of adverse health effects among personnel in the workplace.

**American Medical Association (AMA)**

Professional association of persons holding a medical degree or an unrestricted license to practice medicine with the purpose of promoting the science of medicine and the betterment of public health.

**American National Standards Institute (ANSI)**

A voluntary organization made up of members that coordinate, develop, and publish consensus standards for a wide variety of conditions, procedures, and devices.

**American Occupational Medical Association (AOMA)**

Professional society of medical directors and plant physicians, specializing in occupational medicine and surgery. The organization was established to encourage the study of problems peculiar to the practice of industrial medicine and to develop methods to conserve the health of workers and develop an understanding of medical care needs of workers.

**American Society for Testing and Materials (ASTM)**

Members are from business, the scientific community, government agencies, educational institutions, laboratories, etc., and establish voluntary consensus standards for materials, products, systems, and services.

**American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE)**

A professional society of heating, ventilating, refrigeration, and air conditioning engineers that carries out research programs and develops recommended practices/guidance in these areas. It is the primary association involved in filtration and comfort ventilation as well as indoor air quality (IAQ).

**American Society of Safety Engineers (ASSE)**

An international, multi-disciplinary, not-for-profit, professional organization with more than 34,000 members consisting primarily of individual safety professionals dedicated to the advancement of occupational safety, health, and environmental professions. Organized in 1911 as the United Association of Casualty Inspectors and incorporated in 1915, ASSE is one of the oldest sustaining professional membership societies based in the United States.

**American Standard Code for Information Interchange (ASCII)**

The most common convention for representing alphanumeric data for transmission or storage.

**Americans with Disabilities Act of 1990 (ADA)**

A law passed by Congress with the intent of aiding those with physical and mental disabilities by preventing employment discrimination, providing for public access to public transportation, and providing for the use of other facilities and services used by the public at large.



**Ames test**

A test used to determine the carcinogenicity of chemicals. It is often referred to as the *Salmonella test*. In the test, mutant strains of *Salmonella typhimurium* are cultured on a medium deficient in histidine while being exposed at the same time to a potential carcinogen and liver extracts. Mutagenic bacteria will back-mutate to contain a functional histidine gene, permitting bacterial growth. The level of mutagenicity can be determined by the number of colonies that develop.

**ametropia**

An abnormal condition of the eye with respect to refraction of light, as in myopia.

**AMI**

See *Available Motions Inventory*.

**amicus curiae**

A Latin term meaning "friend of the court," referring to a party authorized by a court to submit a legal brief (but generally not oral argument or evidence) to assist the court in resolving the litigation. The term does not connote a full party in the litigation for purposes of making motions, conducting discovery, participating at trial, or appealing to a higher court. That would require *intervention*.

**amino**

The monovalent radical  $\text{NH}_2$ , when not united with an acid radical.

**amino acid**

An organic acid that is one of the building blocks in the formation of proteins. More than 20 different amino acids are commonly found in proteins. Some of them can be produced within the body, but there are eight that the human organism cannot manufacture; these essential amino acids are isoleucine, leucine, lysine, methionine, phenylalanine, threonine, tryptophan, and valine. Histidine and arginine, which may be manufactured in the body under certain circumstances, are sometimes considered essential. Protein foods that provide large amounts of essential amino acids are known as *complete proteins* and include proteins from animal sources such as meat, eggs, fish, and milk. Proteins that cannot supply the body with all essential amino acids are known as *incomplete proteins*; these are the vegetable proteins most abundantly found in peas, beans, and certain forms of wheat.

**aminopyrine**

A drug used as a fever preventive and pain reliever.

**aminosis**

Excessive formation of amino acids in the body.

**aminuria**

The presence of amines in the urine.

**amitosis**

The direct method of cell division, characterized by simple cleavage of the nucleus, without formation of chromosomes.

**AML**

Acute myelogenous leukemia.

**ammeter**

An instrument for measuring in amperes the strength of a current flowing in a circuit.

**ammoaciduria**

The presence of ammonia and amino acids in the urine.

**ammonia**

A colorless alkaline gas,  $\text{NH}_3$ , with a pungent odor and acrid taste, and soluble in water.

**ammonia nitrogen**

The quantity of elemental nitrogen present in the form of ammonia.

**ammoniated mercury**

A compound used as an antiseptic skin and ophthalmic ointment. It should be applied with caution as excessive use may irritate the skin and cause a dermatitis.

**ammoniemia**

The presence of ammonia or its compounds in the blood.

**ammonification**

Bacterial decomposition of organic nitrogen to ammonia.

**ammonium**

A hypothetical radical,  $\text{NH}_4$ , forming salts analogous to those of the alkaline metals.

**ammoniuria**

Excess of ammonia in the urine.

**amnesia**

Pathologic impairment of memory usually the result of physical damage to areas of the brain from injury, disease, or alcoholism. It may also be caused by a decreased supply of blood

to the brain, a condition that may accompany senility. Another cause is psychological. A shocking or unacceptable situation may be too painful to remember, and the situation is then retained only in the subconscious mind. The technical term for this is repression. Rarely is the memory completely obliterated. Amnesia takes different forms depending upon the area of the brain affected and how extensive the damage is. In *auditory amnesia*, or "word deafness," the patient is unable to interpret spoken language. In *visual amnesia*, or "word blindness," the written language is forgotten. *Tactile amnesia* is the inability to recognize once familiar objects by the sense of touch.

**amoebic dysentery**

See *amebic dysentery*.

**amorphous**

Non-crystalline and without definite shape or form.

**amortization, capital leases**

Charges applicable to assets recorded under capital leases.

**amortization of developmental and preoperating expenses, etc.**

Charges to expense for the 1) amortization of capitalized developmental and preoperating costs and other intangible assets; and 2) obsolescence and deterioration of flight equipment spare parts (included under depreciation and amortization).

**amosite asbestos**

An asbestiform mineral of the amphibole group made up of straight brittle fibers which are light gray to pale brown in color. Often referred to as brown asbestos.

**amp**

See *ampere*.

**ampacity**

Current-carrying capacity of electric conductors expressed in amperes.

**ampere (A)**

A unit of electrical current; that amount of constant electrical current which, if maintained in two straight, infinitely long, parallel conductors having negligible cross-sectional area and separated by 1 meter in a vacuum, would produce a force of  $2 \times 10^{-7}$  newtons per meter of conductor.

**amperometric titrator**

Titration device containing an internal indicator or electrometric device to show when the reactions are complete.

**amphetamine**

A white crystalline powder used as a central nervous system stimulant. It is odorless and has a slightly bitter taste. Amphetamine has the temporary effect of increasing energy and apparent mental alertness. It is used in some cases of mental depression and alcoholism, in the chronic rigidity following encephalitis, in attacks of narcolepsy, and to control the appetite of obese people. It is also used to overcome the depressant effects of barbiturates. Caution is warranted when using amphetamine in persons hypersensitive to stimulants, those suffering from coronary or cardiovascular disease or hypertension, or women in the early stages of pregnancy.

**Amphibia**

A class of animals living both on land and in water.

**amphibole**

One of two major groups of minerals.

**amphibole asbestos**

Fibrous silicates of magnesium, iron, calcium, and sodium that are generally brittle. This form of asbestos is more resistant to heat than the serpentine (chrysotile) type.

**ampholyte**

An organic or inorganic substance capable of acting as either an acid or a base.

**amphoteric**

Material having the capacity of behaving as an acid or a base.

**amphoterocity**

The power to unite with either positively or negatively charged ions, or with either basic or acid substances.

**ampicillin**

A broad-spectrum penicillin of synthetic origin, used in treatment of a number of infections, and available in oral preparations as well as ampules for intramuscular injections. It is active against many of the gram-negative pathogens, in addition to the usual gram-positive ones that are affected by penicillin.



**amplification**

(1) *General*. To make larger, as in the increase of an auditory or visual stimulus, as a means of improving its perception. (2) *Radiation*. As related to radiation detection instruments, the process (either gas, electronic, or both) by which ionization effects are magnified to a degree suitable for their measurement.

**amplitude**

(1) The instantaneous deviation or displacement from some baseline. (2) The peak-to-peak difference, maximum value, or averaged value of a signal.

**amplitude modulation**

The multiplication of an approximately constant higher frequency carrier signal by a second signal, usually of a much lower frequency.

**ampoule**

See *ampule*.

**ampule**

A small, hermetically sealed glass flask which may contain medicine or some other chemical compound in a pre-measured dose for administration by a third party (e.g., parental administration of a medicine to a child). Also known as *ampoule*.

**ampulla**

The enlarged portion of a semicircular canal in the inner ear which contains the crista.

**amputation**

The removal of a limb or other appendage or outgrowth of the body. Amputation is sometimes necessary in cases of cancer, infection, and gangrene. It may be necessary after irreparable traumatic injury to a limb. Blood vessel disorders such as arteriosclerosis, often secondary to diabetes mellitus, account for the greatest percentage of non-injury-induced leg amputations.

**AMSA**

Association of Metropolitan Sewage Agencies.

**amt.**

Amount.

**Amtrak**

American Track operated by the National Railroad Passenger Corporation of Washington, DC. This rail system was created by

President Nixon in 1970, and was given the responsibility for the operation of intercity, as distinct from suburban, passenger trains between points designated by the Secretary of Transportation.

**amu**

Atomic mass unit.

**AMVER**

See *automated mutual assistance vessel rescue system*.

**amyl nitrate**

A vasodilator often used in the treatment of *angina pectoris* because of its quick relief of pain. Presumably it relaxes the smooth muscles of the coronary arteries, causing dilation of these blood vessels. The drugs are dispensed in pearls that are crushed and inhaled. It acts very quickly and its effects are brief. These effects include decreased blood pressure, irregular pulse, headache, and dizziness.

**amyotrophic lateral sclerosis**

A type of motor disorder of the nervous system in which there is destruction of the anterior horn cells and pyramidal tract. The cause is unknown. Early symptoms include weakness of the hands and arms, difficulty in swallowing and talking, and weakness and spasticity of the legs. As the disorder progresses there is increased spasticity and atrophy of the muscles, with loss of motor control and over-activity of the reflexes. There is no known specific or effective treatment. Although there may be periods of remission, the disease usually progresses rapidly with death occurring in 2 to 5 years in most cases.

**an easy distance off**

*Marine Safety*. A reasonably close (comfortable) distance off the bank, allowing ample room for maneuverability. This is a relative term depending upon size of stream and size of tow. The term "easy" pertains more to ease of mind than to closeness of distance and indicates that this portion of the river has no tight spots.

**anabatic wind**

A localized wind that flows up valley or mountainous slopes, usually in the afternoon, caused by the replacement of cool valley air with the warmer air above it.

**anabolism**

The synthesis of more complex living structures from simpler materials.

**anadromous**

Fish that spend their adult life in the sea but swim upriver to fresh water spawning grounds to reproduce.

**anaerobe**

Organisms unable to multiply in any environment that contains oxygen. Anaerobic microorganisms have oxygen-sensitive enzymes and cannot function in the presence of molecular oxygen. Some may be more air tolerant than others. Those severely affected by the presence of oxygen are called *strict anaerobes* or *obligate anaerobes*.

**anaerobic**

Meaning without oxygen. Also refers to cells or organisms that can live without oxygen or processes that occur in the absence of oxygen.

**anaerobic bacteria**

Bacteria that do not require free oxygen to live, or are not destroyed by its absence.

**anaerobic digestion**

Sludge stabilization process where the organic material in biological sludge is converted to methane and carbon dioxide in an airtight reactor. The process is conducted in the absence of air at residence times ranging from 60 days at 20°C to 15 days at 35 to 55°C, with a volatile solids reduction of at least 38 percent.

**anaerobic energy**

That energy derived from anaerobic metabolism.

**anaerobic metabolism**

The partial physiological oxidation of glucose or other bodily fuels in tissues without adequate oxygen, forming lactic acid with the release of energy. It can provide a brief reserve of energy under physical workloads.

**anakis**

Complete deafness.

**analog**

A system, such as the output of a meter, where numerical data are represented by analogous physical magnitudes or electrical signals that vary continuously.

**analog-to-digital conversion**

The process of sampling the amplitude of a continuously varying signal at specified intervals and presenting a digital value to a resolution of some number of bits, typically carried out by an analog-to-digital converter.

**analogue method of forecasting**

A forecast made by comparison of past large-scale synoptic weather patterns that resemble a given (usually current) situation in its essential characteristics.

**analysis**

(1) *General*. A study or evaluation, usually performed to determine the current status of a given system or process. It will often utilize established standards or operating criteria as a baseline for comparison. (2) *Weather forecasting*. The drawing and interpretation of the patterns of various weather elements on a surface or upper air chart.

**analysis of covariance (ANCOVA)**

A modified analysis of variance involving compensation for covariates when random groups cannot be selected.

**analysis of variance (ANOVA)**

Any of a series of statistical tests in which variances are compared across two or more groups to make a determination as to whether the means of the groups are likely to be significantly different from one another.

**analyte**

The substance or contaminant being analyzed for in an analytical procedure.

**analytical blank**

Sampling media which has been set aside for analysis but which was not taken into the field.

**analytical estimating**

A technique in work measurement in which element times are estimated from previous experience and knowledge of the concerned elements.

**analytical standard data**

A set of time values represented in the form of or computed by a mathematical model. *See also standard data.*

**analytical workplace design**

The process of using established human factors' concepts to design a workplace suitable for human interaction.

**analyzer**

In acoustical science, a combination of filters and a system for indicating the relative energy that is passed through the filter system. The measurement is usually interpreted as giving the distribution of energy of the applied signal as a function of frequency.

**anaphylactic shock**

A serious and profound state of shock brought about by hypersensitivity (*see anaphylaxis*) to an allergen, such as a drug, foreign protein, or toxin. Insect bites and stings in hypersensitive persons may produce anaphylactic shock. Early symptoms are typical of an allergic reaction such as sneezing and edema or itching at the site of injection or sting. The symptoms increase in severity very rapidly and progress to dyspnea, cyanosis, and shock. The blood pressure drops rapidly, the pulse becomes weak and faint, and convulsions and loss of consciousness may occur. Severe anaphylactic shock can be fatal if immediate emergency measures are not taken.

**anaphylaxis**

An unusual or exaggerated allergic reaction of an organism to a foreign protein or other substance following previous contact with that material.

**anaplasia**

An irreversible alteration in adult cells toward more primitive or reversed development.

**anatomic**

(1) Of or pertaining to human anatomy or any of its various components. (2) Relating to the science of the morphology or structure of organisms.

**anatomical position**

A standard posture for defining certain aspects of the human body: the body is standing erect with the arms hanging at the sides and the wrists supinated such that the palms face forward/anterior.

**anatomical reference point**

*See landmark.*

**anatomy**

The study of the geometrical and topographical features of all body structures and of the body as a whole.

**anchorage**

An area where a vessel anchors or may anchor, either because of suitability or designation.

**anchor it**

Apply brakes for an emergency stop.

**ancillary input**

Under ISO 14000, material input that is used by the unit process producing the product, but is not used directly as a part of the product.

**Andes disease**

*See altitude sickness.*

**androgen**

Any substance that stimulates male characteristics. The two male androgens are androsterone and testosterone. The androgenic hormones are internal endocrine secretions circulating in the bloodstream and manufactured mainly by the testes under stimulation from the pituitary gland. To a lesser extent, androgens are produced in the adrenal glands in both sexes, as well as by the ovaries in women. Thus, women normally have a small percentage of male hormones, in the same way that men's bodies contain some female sex hormones, the *estrogens*. The androgens are responsible for the secondary sex characteristics, such as the beard and the deepening of the voice at puberty. They also stimulate the growth of muscle and bones throughout the body and thus account in the part for the greater strength and size of men as compared to women.

**anechoic**

The lack of significant reflected energy waves, usually with reference to sounds; having no echo.

**anechoic chamber**

*See anechoic room.*

**anechoic room**

A room whose boundaries (e.g., walls, ceiling, etc.) effectively absorb all the sound that is incident on their surface, thereby creating essentially a free-field condition. Also referred to as a *free-field room*.

**aneisekonia**

A condition in which different image sizes are experienced in the two eyes.

**anemia**

(1) A disorder of the blood as a whole; a deficiency in the number of red corpuscles or of hemoglobin. (2) A pathological deficiency of the oxygen-carrying material of the blood, measured in unit volume concentrations of hemoglobin, red blood cell volume, and red blood cell number.

**anemometer**

An instrument used to measure the motion of wind or air that employs a pitot tube directed by a vane or rotor, or a pressure plate deflected against a spring or gravity.

**aneroid barometer**

A barometer which measure atmospheric pressure using one or more aneroid capsules in series.

**aneroid capsule**

A thin metal disc partially evacuated of air and used to measure atmospheric pressure by measuring the expansion or contraction of the capsule as the pressure changes.

**anesthesia**

Loss of feeling or sensation. Artificial anesthesia may be produced by a number of agents capable of bringing about partial or complete loss of sensation. *See also* **anesthetic**.

**anesthetic**

(1) A chemical that has a depressant effect on the central nervous system, particularly the brain, and which induces insensibility to pain. (2) Lacking feeling or sensation.

**anesthetic effect**

A loss of the ability to perceive sensory stimulation that can be brought about by exposure to certain chemical substances either by inhalation, ingestion, injection, or dermal absorption.

**aneurysm**

A sac formed by dilation of the walls of a blood vessel, usually an artery, and filled with blood. There are two types of aneurysms: *true aneurysm*, in which the wall of the sac consists of one or more of the layers that make up the wall of the blood vessel, and *false aneurysm*, in which all the layers of the vessel are ruptured and the blood is retained by surrounding tissues. Aneurysms occur

when the blood vessel wall becomes weakened by either physical injury to the vessel, a congenital defect, or a disease. They may occur in any vein or artery, but are most commonly found in the abdomen or chest. Certain infections may attack and weaken the tissues of the blood vessels; however, atherosclerosis is a common cause. A less common cause is syphilis. A person may have a small aneurysm for years without being aware of it; such aneurysms are often identified only accidentally, on x-ray examination for another purpose. An aneurysm may form a pulsating tumor which can be painful to the sufferer, especially if it is large enough to press against some other organ in the body. Aneurysms tend to increase in size, and there is a risk of rupture. If rupture occurs in the heart or brain or any other vital organ of the body, the results can be very serious.

**angina**

Any disease marked by spasmodic suffocative attacks, especially *angina pectoris*.

**angina pectoris**

Acute pain in the chest caused by interference with the supply of oxygen to the heart. Most sufferers from angina pectoris can readily distinguish it from other pains in the chest, such as might be caused by indigestion or coronary thrombosis, for the pain is usually of an unmistakable nature. It is generally described as a feeling of tightness, strangling, heaviness, or suffocation. The pain is usually just under the sternum and sometimes radiates down the neck, throat, lower jaw, left arm, and, more rarely, to the stomach, back, or across to the right side of the chest.

**angiosarcoma**

A malignant growth on the inner linings of blood vessels, typically found in areas of high blood vessel concentration, such as the liver. Vinyl chloride monomer is known to cause angiosarcoma of the liver.

**angiospasm**

The spasmodic contraction of blood vessels.

**angle**

The space or figure formed by two diverging lines, measured as the number of degrees one would have to be moved to coincide with the other.

**angle collision**

Collisions which are not head on, rear end, rear to rear, or sideswipe.

**angle diagram**

A graphical plot of the angular relationship over time between two joints as the joints move in some specified way.

**angle of abduction**

See *abduction angle*.

**angle of incidence**

That angle from the perpendicular to the surface of an object at which a light ray or other entity strikes the surface of that object.

**angle of repose**

The maximum angle that the inclined surface of a loosely divided material can make with the horizontal.

**angle of resolution**

See *minimum resolution angle*.

**angle-torque curve**

Any graphical relationship in which the maximum isometric force exerted at a given angle is plotted against that angle for the range of motion.

**angstrom**

A unit of length used chiefly in expressing short wavelengths. It is equal to  $10^{-10}$  meter or  $10^{-8}$  centimeter. It is typically represented in formula or by reference with the symbol Å.

**angular acceleration ( $\alpha$ )**

The rate of change of angular velocity with time. Also referred to as *rotational acceleration*. Represented by the formula:

$$\alpha = \frac{d\omega}{dt}$$

**angular deviation**

That angle between the incident and transmitted light rays in a prism.

**angular displacement**

A vector representing the change in angle by rotation about some origin.

**angular frequency**

The oscillation frequency in an oscillating system multiplied by 2.

**angular momentum (L)**

A vector representing the rotational momentum of an object about an axis.

**angular motion**

The movement of a structure about its own local center of rotation.

**angular velocity**

The rate of change of angular displacement about some axis of rotation with time. Also referred to as *rotational velocity*.

**anhydride**

A chemical compound derived by the elimination of water.

**anhydrous**

A compound that does not contain water.

**animal**

All vertebrate and invertebrate species, including but not limited to man and other mammals, birds, fish, and shellfish.

**animal feed**

Under the Federal Food, Drug, and Cosmetic Act: An article which is intended for use as food for animals other than man and which is intended for use as a substantial source of nutrients in the diet of the animal, and is not limited to a mixture intended to be the sole ration of the animal.

**animal starch**

See *glycogen*.

**anion**

A negatively charged ion that migrates to the anode when an electrical potential is applied to a solution.

**anionic polymer**

A polyelectrolyte with a net negative electrical charge.

**anisomelia**

Inequality of length, as of a limb.

**anisotropic**

Having physical properties which vary in different spatial directions.

**ankle**

The joint formed by the junction of the distal ends of the fibula and the tibia with the talus, including all the surrounding soft tissues.

**ankle bone**

See *talus*.

**ankle breadth**

See *bimalleolar breadth*.

**ankle height**

The vertical distance from the floor or other reference surface to the level of the ankle circumference measure. Measured with the individual standing erect.

**annihilation radiation**

Photons produced when an electron and a positron unit cease to exist. The annihilation of a positron-electron pair results in the production of two photons, each of which has at least 0.511 MeV energy.

**annoyance**

A condition or stimulus which causes one to be disturbed, irritated, or troubled.

**annual aggregate financial ability (accidental releases)**

The amount of money that would be required to pay for accidental releases that may occur within 12 months.

**annual committed effective dose**

According to Chapter I (Environmental Protection Agency), Subchapter F (Radiation Protection Programs) of Title 40 (Protection of Environment) of the Code of Federal Regulations: The committed effective dose resulting from one-year intake of radionuclides released plus the annual effective dose subject to the Environmental Standards for Groundwater Protection under Subchapter F.

**annual injury incidence**

An OSHA formula used for determining the injury rate for comparison with other companies or industries, expressed as:

$$AII = \frac{\text{number of OSHA form 200 recordable injuries} \times 200,000}{\text{number hours worked by company employee}}$$

**annual operating factor**

The annual fuel consumption divided by the product of design firing rate and hours of operation per year.

**annual range of temperature**

The difference between the warmest and coldest months at any given location.

**annuity insurance**

An insurance contract calling for periodic payments to the insured or annuitant for a stated period or for life. See also *insurance*.

**annulus**

The fiber and cartilage structure surrounding the nucleus pulposus in an intervertebral disk. Also referred to as *annulus fibrosus*.

**anode**

Positive electrode. The electrode to which negative ions are attracted.

**anorexia**

The lack of, or loss of, appetite for food.

**anosmia**

The absence of the sense of smell.

**anoxemia**

The reduction of the oxygen content of the blood to below physiologic levels.

**anoxia**

The absence of, or a diminished amount of, oxygen in the blood, tissue, or a body of water. The deficiency of oxygen in organisms often results in an increased rate of breathing. Anoxia in humans is often accompanied by dizziness, rapid heartbeat, and headache. It can result in death.

**anoxic**

A condition characterized by the absence of free oxygen.

**ANPRM**

See *Advanced Notice of Proposed Rule Making*.

**ANSI**

See *American National Standards Institute*.

**antagonism**

(1) *General*. The competitive interaction or opposition of two or more agents to control or lessen the effect of an agent's individual effect(s). (2) *Chemistry*. The interaction of two chemicals having an opposing, or neutralizing, effect on each other, or given some specific biological effect, a chemical interaction that appears to have an opposing or neutralizing effect over what might otherwise be expected.

**antagonist**

An entity which opposes or competes with the action of another entity. It may be a person, group, muscle, or drug.

**antagonistic**

A substance that tends to nullify the action of, or acts against, another. Opposition in the action between similar things, as between medicines, chemicals, muscles, etc.

**Antarctica mineral resource activity**

Under the Federal Antarctic Protection Act of 1990: Prospecting, exploration, or development in Antarctica of mineral resources, but does not include scientific research within the meaning of Article III of the Antarctic treaty, done at Washington, DC on December 1, 1959.

**Antarctic "ozone hole"**

Refers to the seasonal depletion of ozone in a large area over Antarctica.

**antenna**

A metallic apparatus for sending and receiving electromagnetic waves.

**antenna array**

A group of directional antennas.

**anterior**

Pertaining to the front portion of the body or toward the front of the body.

**anterior neck length**

The surface distance from suprasternale to the junction of the posterior lower jaw and the neck in the midsagittal plane. It is measured with the individual standing erect and looking straight ahead.

**anterior waist length**

The surface distance from the most anterior point of the lower neck to the waist. Measured with the individual standing erect.

**anthracosilicosis**

A complex, chronic pneumoconiosis that is a combination of anthracosis and silicosis.

**anthracosis**

Also known as Collier's disease, Shaver's disease, miner's lung, and black lung; a usually asymptomatic pneumoconiosis resulting from the accumulation of carbon from inhaled smoke or coal dust in the lungs.

**anthrax**

An acute, highly infectious, bacterial disease usually affecting the skin. Also known as wool sorter's disease, rag picker's disease, or malignant edema, this disease is transmitted by contact with tissues of infected animals

(cattle, sheep, goats, horses, and others) or contaminated hair, wool, or hides.

**anthro-**

Prefix; like or pertaining to man.

**anthropogenic compound**

A compound created by human beings, often relatively resistant to biodegradation.

**anthropology**

The science of man and mankind, including the study of the physical and mental constitution of man, his cultural development, and social conditions, as exhibited both in the present and in the past.

**Anthropology Research Project (ARP)**

A Department of Defense (DOD)-sponsored project to provide anthropometric surveys for USAF flying personnel.

**anthropometer**

A device for measuring linear dimensions of the body.

**anthropometric**

Relating to human body measurements and modes of action to determine their influence on the safe and efficient operation of equipment.

**anthropometric evaluation**

A study of body size and actions with the objective of improving the design of machines and tools to enable more effective use of them by humans.

**anthropometric measurement**

Any physical measurement derived from the body or its various parts.

**anthropometrist**

One who is qualified by education, training, and experience to practice anthropometry.

**anthropometry**

The measurement of the human body, including body dimensions, range of motion of body members, and strength (including both static and dynamic measurements). The branch of anthropology that deals with the comparative measurements of the human body. *See also ergonomics.*

**anthropomorphic**

Having a form like a human or human parts.



**anthropophobia**

A pathological fear of human companionship or of society in general.

**antibiosis**

A relationship between two organisms that is harmful to one, as parasitism.

**antibiotic**

A chemical substance produced by living organisms that inhibits the growth of or kills other organisms.

**antibody**

A globulin found in tissue fluids and blood serum that is produced in response to the stimulus of a specific antigen, and is capable of combining with that antigen to neutralize or destroy it. Also referred to as *immune substances*.

**anticipated cost of removal**

Under the Federal Forest and Range Land Renewable Resources Planning Act of 1974: The projected cost of removal of wood residues from timber sales areas to points of prospective use, as determined by the Secretary of Agriculture at the time of advertisement of the timber sales contract in accordance with appropriate appraisal and sale procedures.

**anticipated value**

Under the Federal Forest and Range Land Renewable Resources Planning Act of 1974: The projected value of wood residues as fuel or other merchantable wood products, as determined by the Secretary of Agriculture at the time of advertisement of the timber sales contract in accordance with appropriate appraisal and sale procedures.

**anticipation error**

An error produced due to an expectation of a change.

**anticoagulant**

Any substance that inhibits the blood clotting mechanism.

**anticonvulsant**

Inhibiting convulsions; an agent that suppresses convulsions.

**anticyclone**

An area of high pressure around which the wind blows clockwise in the Northern Hemisphere and counterclockwise in the Southern Hemisphere.

**antidegradation clause**

Part of federal air quality and water quality requirements prohibiting deterioration where pollution levels are above the legal limit.

**antidote**

A remedy to counteract the effects of a toxic substance.

**anti-exposure suit**

Any form of outer clothing to protect an individual from the elements, especially wind and cold temperatures.

**antifoam agent**

A surface active agent used to reduce or prevent foaming.

**antifoulant**

An additive or dispersant that prevents fouling and/or the formation of scale.

**antifouling paint**

Under the Federal Organotin Antifouling Paint Control Act of 1988: A coating, paint, or treatment that is applied to a vessel to control fresh water or marine fouling organisms.

**anti-g straining maneuver (AGSM)**

Any internally generated technique for temporarily increasing blood pressure in an attempt to withstand high positive g stresses in high performance aircraft and/or spacecraft. See *M-1 maneuver* and *L-1 maneuver*.

**anti-g suit**

A special garment designed to apply counter pressure to the lower body during high positive g forces as an aid in preventing blackout of the wearer.

**antigen**

That portion or product of a biologic agent capable of stimulating the formation of specific antibodies.

**anti-glare filter**

A transparent device for reducing glare.

**antihistamine**

A drug that counteracts the effects of histamine, a normal body chemical that is believed to cause the symptoms of persons who are hypersensitive to various allergens. Antihistamines are used to relieve the symptoms of allergic reactions, especially hay fever and other allergic disorders of the nasal passages. Some antihistamines have an antinauseant action that is useful in the relief of motion sick-

ness while others have a sedative and hypnotic action and may be used as tranquilizers.

**anti-inflammatory**

Counteracting or suppressing inflammation.

**antiknock additive**

A compound, usually tetraethyl lead, added to gasoline to minimize engine pre-ignition and its accompanying knocking and pinging. Pollution from the release of such compounds in auto emissions led to the introduction of unleaded gasoline.

**antilogarithm**

A number whose logarithm returns original number.

**antimetabolite**

A substance exerting its desired effect perhaps by replacing or interfering with the utilization of an essential metabolite.

**antimicrobial**

Agent that kills microbial growth. *See also disinfectant, sanitizer, and sterilizer.*

**antimony**

A chemical element, atomic number 51, atomic weight 121.75, symbol Sb. Antimony compounds are used in medicine as anti-infective agents in the treatment of tropical diseases, especially those of protozoan origin. All antimony compounds are potentially poisonous and must be used with caution.

**antimorphic**

In genetics, antagonizing or inhibiting normal activity (as in an antimorphic mutant gene).

**antioxidant**

A chemical compound added to a substance to reduce deterioration from oxidation; a preservative.

**antipole**

A point on the skull opposite to the point of impact in an accident.

**antiscalant**

An additive that prevents the formation of inorganic scale.

**antiseptic**

Chemical compounds that are capable of reducing the number of microorganisms on body surfaces. Used primarily on humans and animals, in contrast to *disinfectants*, which are used primarily on non-living surfaces as a

form of infection control. *See also disinfectant.*

**antitoxin**

An antibody to the toxin of a microorganism, usually a bacterial exotoxin. Antitoxins combine with a specific toxin, in vivo or in vitro, with the consequent neutralization of toxicity.

**antitrope**

One of two structures that are similar but reverse oriented, like a right and left glove.

**antivenin**

A material used to neutralize the venom of a poisonous animal.

**anuria**

The absence of the excretion of urine from the body.

**anxiety**

A feeling of uneasiness, apprehension, or dread.

**AOA**

American Optometric Association.

**AOC**

*See assimilable organic carbon.*

**AOMA**

*See American Occupational Medical Association.*

**AOPs**

*See advanced oxidation processes.*

**aorta**

The great artery arising from the left ventricle. *See also circulatory system.*

**aortoclasia**

Rupture of the aorta.

**apathy**

Reactive absence of emotions.

**APCA**

Air Pollution Control Association.

**apepsia**

Cessation or failure of digestive function.

**APF**

*See assigned protection factor.*

**APHA**

American Public Health Association.

**aphagia**

Loss of the power of swallowing and subsequent failure to eat, which can result in illness or death.

**aphakic**

Pertaining to an individual with the lens removed from one or more eyes.

**API**

American Petroleum Institute.

**API gravity**

An index inversely related to specific gravity used to identify liquid hydrocarbons.

**API separator**

Rectangular basin in which wastewater flows horizontally while free oil rises and is skimmed from the surface.

**aplasia**

Absence of an organ due to failure of development of the embryonic primordium.

**aplastic**

Pertaining to or characterized by aplasia; having no tendency to develop into new tissue.

**aplastic anemia**

A condition in which the bone marrow fails to produce an adequate supply of red blood cells.

**apnea**

The temporary cessation of breathing.

**apneumia**

A developmental anomaly with the absence of the lungs.

**apocrine**

Denoting that type of glandular secretion in which the secretory products become concentrated at the free end of the secreting cell and are thrown off, along with the portion of the cell where they have accumulated, as in the mammary gland. *See also eccrine gland.*

**aponeurosis**

An expansion of a muscle tendon which serves to attach a muscle to bone at an origin or insertion, or to enclose a group of muscles.

**apophysis**

Any outgrowth or swelling, especially a bony outgrowth that has never been entirely separated from the bone of which it forms a part, such as a process, tubercle, or tuberosity.

**apoplexy**

Copious extravasation of blood into an organ; often used alone to designate such extravasa-

tions into the brain (cerebral apoplexy) after rupture of an intracranial blood vessel; stroke.

**apparent color**

The color in water caused by the presence of suspended solids.

**apparent motion**

An illusion of motion, regardless of the cause, whether by certain patterns of non-moving stimuli, by certain conditions under which non-moving stimuli are observed, or by stimulation of sensory receptors or the nervous system.

**appeal**

A legal term referring to carrying a matter to a higher tribunal, as from agency staff to a hearing officer, or a hearing officer to reviewing board, or reviewing board to court, or trial court to appellate court. The Supreme Court is the highest appeal court of a state. The United States Supreme Court is the highest appeal court in the federal judiciary.

**appellate**

Pertaining to or having cognizance of appeals and other proceedings for the judicial review of adjudications. The term has a general meaning, and it has a specific meaning indicating the distinction between original and jurisdiction and appellate jurisdiction.

**appellate court**

A court having jurisdiction of appeal and review; a court to which causes are removable by appeal, certiorari, error, or report.

**appendicitis**

Inflammation of the vermiform appendix. Appendicitis is a serious disease, usually requiring surgery.

**appetite**

The desire for food. It is stimulated by the sight, smell, or thought of food and accompanied by the flow of saliva in the mouth and gastric juice in the stomach. The stomach wall also receives an extra blood supply in preparation for digestive activity. Appetite is psychological, depending on memory and associations, as compared with hunger, which is physiologically aroused by the body's need for food. Appetite can be discouraged by unattractive food, surroundings, or company, and by emotional states such as anxiety, irritation, anger, and fear. Certain drugs may also affect

appetite. Chronic loss of appetite is known as anorexia.

**appliance**

(1) *General*. Utilization equipment, generally other than industrial, normally built to perform one or more functions such as clothes washing, air conditioning, food mixing, deep frying, etc. (2) *Aviation*. Any instrument, mechanism, equipment, part, apparatus, appurtenance or accessory, including communications equipment, that is used or intended to be used in operating or controlling an aircraft in flight, is installed in or attached to the aircraft, and is not part of an airframe, engine, or propeller.

**applicant**

*Transportation*. A governmental entity, a nonprofit public-purpose organization, or any responsible person having the legal, financial, and technical capacity to implement an intermodal passenger terminal project under 49 CFR 256. The applicant must have legal authority to receive and expend federal funds.

**application**

A software package for performing a specific type of task other than direct system support or system utilities.

**applied load**

The actual load (or stress) imposed on a structure in the service environment

**applied sciences**

Those disciplines involved in the use of information gathered by the basic sciences.

**apportionment**

(1) *Government*. The process by which legislative seats are distributed among units entitled to representation. (2) *Aviation*. Distribution of Airport Improvement Plan (AIP) funds from the Airport & Airways Trust Fund to airport sponsors based on enplanements or cargo landed weights. Also referred to as *entitlement*. See also *passenger facility charge*.

**approach clearance**

Authorization by Air Traffic Control (ATC) for a pilot to conduct an instrument approach. The type of instrument approach for which clearance and other pertinent information are provided in the approach clearance when required.

**approach control facility**

A terminal air traffic control facility providing approach control service.

**approach control service**

Air traffic control service provided by an approach control facility for arriving and departing Visual Flight Rules (VFR)/Instrument Flight Rule (IFR) aircraft and, on occasion, en route aircraft. At some airports not served by an approach control facility, the Air Route Traffic Control Center (ARTCC) provides limited approach control service.

**approach gate**

An imaginary point used within Air Traffic Control (ATC) as a basis for vectoring aircraft to the final approach course. The gate will be established along the final approach course 1 mile from the outer marker (or the fix used in lieu of the outer marker) on the side away from the airport for precision approaches and 1 mile from the final approach fix on the side away from the airport for non-precision approaches. In either case, when measured along the final approach course, the gate will be no closer than 6 miles from the landing threshold.

**approach light system (ALS)**

An airport lighting facility which provides visual guidance to landing aircraft by radiating light beams in a directional pattern by which the pilot aligns the aircraft with the extended centerline of the runway on his final approach for landing. Condenser-Discharge Sequential Flashing Lights/Sequenced Flashing Lights may be installed in conjunction with the Approach Lighting System (ALS) at some airports. Types of approach light systems are 1) ALSF-1: Approach Light System with Sequenced Flashing Lights in Instrument Landing System (ILS) Cat-I configuration. 2) ALSF-2: Approach Light System with Sequenced Flashing Lights in ILS Cat-II configuration. The ALSF-2 may operate as a Simplified Short Approach Light System with Runway Alignment Indicator Lights (SSALR) when weather conditions permit. 3) SSALF: Simplified Short Approach Light System with Sequenced Flashing Lights. 4) SSALR: Simplified Short Approach Light System with Runway Alignment Indicator Lights. 5) MALSF: Medium Intensity Approach Light System with Sequenced Flashing Lights. 6) MALSR: Medium Intensity Approach Light

System with Runway Alignment Indicator Lights. 7) LDIN: Lead-in-light system: Consists of one or more series of flashing lights installed at or near ground level that provide positive visual guidance along an approach path, either curving or straight, where special problems exist with hazardous terrain, obstructions, or noise abatement procedures. 8) RAIL: Runway Alignment Indicator Lights (Sequenced Flashing Lights which are installed only in combination with other light systems). 9) ODALS: Omnidirectional Approach Lighting System consists of seven omnidirectional flashing lights located in the approach area of a nonprecision runway. Five lights are located on the runway centerline with the first light located 300 feet from the threshold and extending at equal intervals up to 1,500 feet from the threshold. The other two lights are located, one on each side of the runway threshold, at a lateral distance of 40 feet from the runway edge, or 75 feet from the runway edge when installed on a runway equipped with a Visual Approach Slope Indicator (VASI).

#### **approach locking**

Electric locking effective while a train is approaching, within a specified distance. A signal displaying an aspect to proceed, and which prevents, until after the expiration of a predetermined time interval after such signal has been caused to display its most restrictive aspect, the movement of any interlocked or electrically locked switch, movable-point frog, or derail in the route governed by the signal, and which prevents an aspect to proceed from being displayed for any conflicting route.

#### **approach sequence**

The order in which aircraft are positioned while on approach or awaiting approach clearance.

#### **approach signal**

A roadway signal used to govern the approach to another signal and, if operative, so controlled that its indication furnishes advance information of the indication of the next signal.

#### **approach speed**

The recommended speed contained in aircraft manuals used by pilots when making an approach to landing. This speed will vary for

different segments of an approach as well as for aircraft weight and configuration.

#### **approach velocity**

The average water velocity of fluid in a channel upstream of a screen or other obstruction.

#### **approachway**

The airspace through which aircraft approach or leave a landing area.

#### **appropriate air traffic service (ATS) authority**

The relevant authority designated by the state responsible for providing air traffic services (ATS) in the airspace concerned. In the United States, the "appropriate ATS authority" is the Director, Office of Air Traffic System Management, ATM-1.

#### **appropriate authority**

(1) Regarding flight over the high seas, the relevant authority is the State of Registry. (2) Regarding flight over other than the high seas, the relevant authority is the state having sovereignty over the territory being overflown.

#### **approved**

(1) *Product Safety*. Item that has been tested and found to be acceptable by a recognized authority and approved for use under specified conditions. Testing agencies include the U.S. Bureau of Mines, Factory Mutual (FM), Underwriters Laboratories (UL), the U.S. Department of Agriculture, and others. (2) *Marine Safety*. A term used to indicate Coast Guard approval of a specific item among the limited number that the Coast Guard has been directed by law to test and "approve." Some of these items are personal flotation devices, fire extinguishers, carburetor backfire flame arresters, distress signals, and certain types of life rafts. The standards program has not required "approval" of any boat or item of associated equipment.

#### **approved equipment**

Equipment that has been designed, tested, found to be acceptable, and approved by an appropriate authority as safe for use in a specified hazardous location or atmosphere.

#### **approved for the purpose**

Approved for a specific use, purpose, environment, or application as described in a particular standard requirement. Suitability of equipment, or materials for a specific purpose, environment or application may be deter-

mined by a nationally recognized testing laboratory, inspection agency, or other organization concerned with product evaluation as part of its listing and labeling program.

**approved landfill**

Site that has been approved by a government environmental protection authority (federal or state) for the disposal of hazardous wastes.

**approved refrigerant recycling equipment**

Under the Clean Air Act (CAA): Equipment certified by the EPA Administrator (or an independent standards testing organization approved by the Administrator) to meet the standards established by the Administrator and applicable to equipment for the extraction and reclamation of refrigerant from motor vehicle air conditioners. Such standards shall, at a minimum, be at least as stringent as the standards of the Society of Automotive Engineers (SAE) in effect as of November 15, 1990 and applicable to such equipment (SAE Standard J-1990).

**apocrine**

Sweat glands that open into hair follicles. Apocrine sweat glands are limited to a few regions of the body, notably the underarm and genital areas.

**apraxia**

Impairment of the ability to use objects correctly.

**apron**

(1) A floor or lining of resistant material at the toe of a dam or bottom of a spillway to prevent erosion from turbulent water flow. (2) That portion of a pier and wharf measured between the outer edges of the water-facing side and the transit shed or other inshore structure. (3) That portion of an airport runway area used for final aircraft checklist completion prior to departure. It is not intended for use in any actual aircraft landing or take-off activity.

**aptitude**

An innate ability for acquiring a particular skill or knowledge.

**aptitude test**

Any system or device for determining whether an individual is likely to be successful in an activity for which he/she has not yet been trained.

**APWA**

American Public Works Association.

**AQCR**

See *Air Quality Control Region*.

**aquatic chronic value (ACV)**

As used in Rule 57 (pursuant to Act 245 of 1929), a value used to represent the higher concentration of a substance which does not cause an adverse effect to important aquatic species when exposure occurs continuously over the lifetime of the organism.

**aquatic nuisance species**

Under the Federal Non-indigenous Aquatic Nuisance Prevention and Control Act of 1990: A non-indigenous species that threatens the diversity or abundance of native species or the ecological stability of infested waters, or commercial, agricultural, or recreational activities dependent on such waters.

**aqueduct**

A structure designed to transport domestic or industrial water from a supply source to a distribution point, often by gravity. See also *canal/ditch*.

**aqueous**

Of, relating to, or resembling water; made from, with or by water.

**aqueous film forming foam (AFFF)**

A fluorinated surfactant with a foam stabilizer which is diluted with water to act as a temporary barrier to exclude air from mixing with the fuel vapor by developing an aqueous film on the fuel surface of some hydrocarbons which is capable of suppressing the generation of fuel vapors.

**aqueous humor**

The fluid in the anterior (front) chamber of the eye.

**aquifer**

An underground geological formation, or group of formations, containing usable amounts of groundwater that can supply wells and springs.

**aquifuge**

An underground layer of impermeable rock that will not allow the free passage of groundwater.

**arable**

Land capable of being farmed.



**arachnoid layer**

A nonvascular membrane between the dura mater and pia mater surrounding the brain and spinal cord.

**ARAR**

(1) *System Safety*. Acronym for "accident risk assessment report." A detailed analysis of a facility and its operating system(s) to determine hazardous conditions and risk abatement measures. (2) *Environmental*. Acronym for "applicable or relevant and appropriate requirements." Cleanup standards, control standards, and other substantive environmental protection requirements, criteria, and limitations promulgated under federal, state, and local laws.

**arbitrary delay**

An unscheduled interruption of work which is unrelated to the task or job being performed.

**arbitration**

A process for the resolution of disputes. Decisions are made by an impartial arbitrator selected by the parties involved. These decisions are usually legally binding. *See also mediation.*

**arc**

An anthropometric measurement following an open curved path, where the curve makes up the majority of the measurement value. Also referred to as *curvature*. *See also circumference.*

**arc lamp**

An illumination source which operates using the principles of discharge of low cathode voltages and high currents.

**arc-welder's disease**

A pneumoconiosis resulting from the inhalation of iron particles. May also be referred to as *siderosis*.

**arch**

(1) *General*. A curved structure that supports the weight of material over an open space. (2) *Anatomy*. The curvature on the inferior surface of the foot.

**arch height**

The maximum vertical distance from the floor or other reference surface on which a person stands to the bottom of the foot tissue between the anterior and posterior support points. Measured with the individual standing erect,

with body weight equally divided between both feet.

**Archimedes' principle**

The principle of buoyancy that states the force on a submerged body acts vertically upward through the center of gravity of the displaced fluid and is equal to the weight of the fluid displaced.

**Archimedes' screw**

*See screw pump.*

**arctic tundra**

*See tundra.*

**arcus cloud**

*See roll cloud.*

**area**

The measure of the size or extent of a surface. Its dimensions are

$$\text{AREA} = (\text{LENGTH})^2$$

In the MKS System, area is measured in *meters*<sup>2</sup>. In the CGS System, area is measured in *centimeters*<sup>2</sup>. In the English System, area is measured in *feet*<sup>2</sup> or, frequently, *inches*<sup>2</sup>.

**Area, A**

The cross-sectional area through which air moves. The area could be the cross-sectional area of a duct, a lab fume hood, a door, or any space through which air moves. Measured in square feet.

**area affected by Outer Continental Shelf activities**

Under the Federal Outer Continental Shelf Lands Act Amendments of 1978: Any geographic area which is under oil or gas lease on the Outer Continental Shelf; where Outer Continental Shelf exploration, development, or production activities have been permitted, except geophysical activities; where pipeline rights-of-way have been granted; or otherwise impacted by such activities including but not limited to expired lease areas, relinquished rights-of-way and easements, Outer Continental Shelf supply vessel routes, or other areas as determined by the Secretary of the Commerce.

**area control center**

An ICAO (International Civil Aviation Organization) term for an air traffic control facility primarily responsible for Air Traffic Control (ATC) services being provided to Instrument

Flight Rules (IFR) aircraft during the en route phase of flight. The U.S. equivalent facility is an air route traffic control center.

**area control computer complex (ACCC)**

The common automation system equipment and software that support control of aircraft in a specific area, and which are located within each area control facility. The ACCC is one portion of the AAS (Advanced Automation System).

**area control facility (ACF)**

As of 1992, the planned 23 facilities that result from consolidation of existing Air Route Traffic Control Center (ARTCC) and Terminal Radar Approach Control (TRACON)/Terminal Radar Approach Control in Tower Cab (TRACAB) facilities. An Area Control Facility (ACF) may be formed from an existing ARTCC or may be created in a new building. The number, location, and implementation dates of ACFs are in accordance with the National Airspace System Plan. There will be 20 Continental U.S. (CONUS) ACFs converted from ARTCCs plus Honolulu, Anchorage, and the New York TRACON. Each can accomplish either an en route or an approach/departure control.

**Area Director**

The employee or officer regularly or temporarily in charge of an Area Office of the Occupational Safety and Health Administration, U.S. Department of Labor, or any other person or persons who are authorized to act for such employee or officer. The term also includes any employee or officer exercising supervisory responsibilities over an Area Director. A supervisory employee or officer is considered to exercise concurrent authority with the Area Director.

**area navigation (RNAV)**

A method of navigation that permits aircraft operation on any desired course within the coverage of station-referenced navigation signals or within the limits of a self-contained system capability. Random area navigation routes are direct routes, based on area navigation capability, between waypoints defined in terms of latitude/longitude coordinates, degree/distance fixes, or offsets from published or established routes/airways at a specified distance and direction. The major types of equipment are 1) Combined VOR and TA-

CAN navigational facility (VORTAC) referenced or Course Line Computer (CLC) systems, which account for the greatest number of Radio Navigation (RNAV) units in use. To function, the CLC must be within the service range of a VORTAC. 2) OMEGA/VLF. Although two separate systems, can be considered as one operationally. A long-range navigation system based upon Very Low Frequency (VLF) radio signals transmitted from a total of 17 stations worldwide. 3) Inertial navigation systems (INS), which are totally self-contained and require no information from external references. They provide aircraft position and navigation information in response to signals resulting from inertial effects on components within the system. 4) Microwave Landing System (MLS) Area Navigation (MLS/RNAV), which provides area navigation with reference to an MLS ground facility. 5) LORAN-C is a long-range radio navigation system that uses ground waves transmitted at low frequency to provide user position information at ranges of up to 600 to 1,200 nautical miles at both en route and approach altitudes. The usable signal coverage areas are determined by the signal-to-noise ratio, the envelope-to-cycle difference, and the geometric relationship between the positions of the user and the transmitting stations.

**area of critical environmental concern**

Under the Federal Land Policy and Management Act of 1976: Areas within the public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards.

**area of review**

The area surrounding an injection well that is reviewed during the permitting process to determine whether the injection operation will induce flow between aquifers.

**area sample**

An environmental sample obtained at a fixed point in the workplace. Used to measure properties of the workplace itself, which may

or may not correlate with personal results of individual worker samples.

**area source**

Any small source of non-natural air pollution that is released over a relatively small area but which cannot be classified as a point source. Such sources include vehicles and other small fuel combustion engines.

**area to be submerged**

The known extent of the intended lake that will be created behind a dam under construction.

**area wide template**

*Transportation.* A computerized format (spreadsheet) for data entry of system length, vehicle travel, population, net land area, fatal and injury accidents, and percent of travel by vehicle type.

**argyria**

Poisoning by silver or a silver salt. A prominent symptom is a permanent gray discoloration of the skin, conjunctiva, and internal organs.

**arising from the operation of a railroad**

Includes all activities of a railroad that are related to the performance of its rail transportation business.

**arithmetic mean**

The sum of values divided by the number of values.

**arm**

One of the pair of upper extremities, consisting of the humerus, radial, and ulnar bones, and other associated soft tissues.

**arm circumference**

See *forearm circumference*, *upper arm circumference*, and *axillary arm circumference*.

**arm/disarm device**

An electrically or mechanically actuated switch that can make or break one or more electroexplosive firing circuits. It operates in a manner similar to a safe and arm (S&A) device, except they do not physically interrupt the explosive train. See also *safe and arm device*.

**arm-hand**

Involving both the arm and the hand, generally referring to internally generated or motor activities. See also *hand-arm*.

**arm-hand steadiness**

A measure of the ability to keep both the hand and arm steady, whether stationary or moving. See also *hand steadiness*.

**arm-hand-tool aggregate**

The combination of the hand/arm and tool acting as a biomechanical unit.

**arm reach from wall**

The horizontal distance from the wall to the tip of the longest finger. Measured with the rear of both the individual's shoulders against the wall, and with both hands and arms extended forward parallel to the floor for symmetry.

**arm work**

That physical work which uses the arm(s), with essentially no or minimal trunk or leg involvement.

**Armed Forces**

The Army, Navy, Air Force, Marine Corps, and Coast Guard, including their regular and reserve components and members serving without component status.

**arming plug**

A removable device that provides electrical continuity when inserted in a firing circuit.

**armored cable**

Type AC armored cable is a fabricated assembly of insulated conductors in a flexible metallic enclosure.

**armpit**

See *axilla*.

**Armstrong starter**

Old-fashioned hand crank (usually for automobiles, but generally used for any type of engine).

**Army Aviation Flight Information Bulletin**

A bulletin that provides air operation data covering Army, National Guard, and Army Reserve aviation activities.

**ARO**

See *airport reservation office*.

**aromatic hydrocarbon**

A major group of unsaturated cyclic hydrocarbons containing one or more rings made up

of 6 carbon atoms. This group, most notably benzene, is chiefly derived from petroleum and coal tar. The name is due to the strong and often pleasant odor characteristic of substances within this group.

**aromatic process oils**

See *high boiling aromatic oils*.

**arousal**

The degree of awareness of the environment.

**ARP**

See *airport reference point*.

**arraignment**

The stage of a criminal prosecution where the defendant pleads guilty, not guilty, or *nolo contendere* (no contest).

**arrangement of passenger transportation**

Includes establishments engaged in providing travel information and acting as agents in arranging tours, transportation, car rentals, and lodging for travelers.

**arrangement of passenger transportation not elsewhere classified**

Establishments primarily engaged in arranging passenger transportation (other than travel agencies and tour operators), such as ticket offices (not operated by transportation companies) for railroads, buses, ships, and airlines.

**arrangement of workplace principals**

See *workplace layout principals*.

**array**

A group of solar collection devices arranged in a suitable pattern to efficiently collect solar energy.

**arrestance**

Refers to the ability of a filter to remove coarse particulate matter from air passed through it.

**arresting system**

*Aviation*. A safety device consisting of two major components, namely, engaging or catching devices and energy absorption devices for the purpose of arresting both tailhook and/or nontailhook-equipped aircraft. It is used to prevent aircraft from overrunning runways when the aircraft cannot be stopped after landing or during aborted takeoff. Arresting systems have various names (e.g., arresting gear, hook device, wire barrier cable).

**arrhythmia**

See *cardiac arrhythmia*.

**arrival aircraft interval (AAI)**

An internally generated program in hundredths of minutes based upon the Airport Acceptance Rate. *Arrival airport interval* is the desired optimum interval between successive arrival aircraft over the vertex.

**arrival center**

The air route traffic control center having jurisdiction for the impacted airport.

**arrival delay**

A parameter which specifies a period of time in which no aircraft will be metered for arrival at the specified airport.

**arrival post**

A signboard placed approximately 1/2 mile below the lock on the upstream and the downstream side to inform the pilot of the towboat that he has arrived at the lock and his preference is rated upon his first arrival either below or above. This term is falling into disuse since the advent of radio communications between towboats and the lock.

**arrival program sequencing**

The automated program designed to assist in sequencing aircraft destined for the same airport.

**arrival sector**

An operational control sector containing one or more meter fixes.

**arrival time**

The time an aircraft touches down on arrival.

**arroyo**

A stream or watercourse that is often dry.

**arsenic**

A chemical element, atomic number 33, atomic weight 74.92, symbol As. Arsenic compounds have been widely used in medicine; however, they have been replaced for the most part by antibiotics, which are less toxic and equally effective. Some arsenic compounds are used for infectious disease, especially those caused by protozoa. Since arsenic is highly toxic, it must be administered with caution. The antidote for arsenic poisoning is *dimercaprol*.

**arson**

In common law, the malicious burning of the premises of another. More broadly, any act

by a person with the specific intent of using fire to destroy a building or occupied structure of another, or causing the destruction or damage of any property, regardless of the owner, for the purpose of collecting insurance for the loss.

**arson clause**

A clause in insurance policies voiding coverage if a fire is set under the direction of or by the insured.

**arsphenamine**

A light yellow powder containing 30 to 32 percent of arsenic; used intravenously in syphilis, yaws, and other protozoan infections.

**ARSR**

See *air route surveillance radar*.

**ARTCC**

See *Air Route Traffic Control Center*.

**arterenol**

See *norepinephrine*.

**arterial highway**

Arterial highways serve major traffic movements or major traffic corridors. While they may provide access to abutting land, their primary function is to serve traffic moving through the area. See also *freeway, minor arterial, and principal arterial*.

**arterial street**

A major thoroughfare, used primarily for through traffic rather than for access to adjacent land, that is characterized by high vehicular capacity and continuity of movement.

**arteriosclerosis**

Thickening and loss of the elasticity of the coats of the arteries, with inflammatory changes; popularly known as hardening of the arteries. There are two main types: *arteriosclerosis proper*, in which the hardening is the result of fibrous and mineral deposits in the middle layer of the artery wall; and *atherosclerosis*, in which fatty and other substances collect in the inner lining of the arteries to form what are known as atheromatous plaques. These plaques encroach upon the passageway and gradually obstruct the flow of blood. Of the two types, atherosclerosis is by far the more common and more serious condition. Atherosclerosis is one of the major killers in the United States today.

**arteriovenous oxygen difference**

The difference in oxygen content between the blood entering and leaving the pulmonary capillaries.

**artery**

A blood vessel that conveys blood from the heart to any part of the body.

**artesian water**

Bottled water from a well that taps a confined aquifer located above the normal water table.

**artesian well**

A well with sufficient pressure to produce water without pumping.

**arthralgia**

Pain in a joint.

**arthritis**

Inflammation of a joint. The term covers more than 100 different types of joint diseases, the most common types being *rheumatoid arthritis* and *osteoarthritis*. Arthritis may also arise as a side effect of a number of diseases, including tuberculosis, syphilis, gonorrhea, and viral diseases such as measles and influenza. Rheumatism is a general term for arthritis and is often applied to almost any pain in the joints or muscles. The symptoms of rheumatoid arthritis are usually mild with a gradual onset. Osteoarthritis is most likely to occur in the large and weight-bearing joints. It is a degenerative disorder that is commonly secondary to other joint diseases. Another common form of osteoarthritis affects the joints of the fingers; this form usually occurs in women. Osteoarthritis is much less crippling than severe rheumatoid arthritis because it does not cause the two bone surfaces to fuse and immobilize the joint.

**arthroscope**

An instrument having a small diameter tube used for visualizing the interior of some body part.

**article**

Under the Toxic Substances Control Act (TSCA), a manufactured item which is formed to a specific size and shape during manufacture whose end use function is dependent in whole or in part on that specific size and shape.

**articular**

Pertaining to one or more joints.

**articulate**

Produce speech sounds easily recognizable by another individual fluent in a given language.

**articulated bus**

A bus usually 55 feet or more in length with two connected passenger compartments that bend at the connecting point when the bus turns a corner.

**articulated motor buses**

Extra-long (54 ft. to 60 ft.) motor buses with the rear body section connected to the main body by a joint mechanism. The joint mechanism allows the vehicles to bend when in operation for sharp turns and curves, and yet have a continuous interior.

**articulated total body model (ATB)**

A computerized model developed for examining the biodynamic effects of ejection from high-performance aircraft on the various body segments.

**articulation index (AI)**

See *speech articulation index*.

**artificial**

(1) A replacement for a natural limb. (2) A mechanical device that can substitute temporarily or permanently for a body organ.

**artificial gravity**

That relative downward acceleration experienced by an individual or object on the interior of a larger, rotating object as a result of centrifugal force.

**artificial horizon**

A graphic or pictorial flight instrument display for providing the pilot with information about the orientation of the aircraft with respect to the ground.

**artificial pupil**

A small aperture in a manufactured or cultured disk or diaphragm used to restrict the amount of light entering the eye.

**artificial radioactivity**

(1) Radioactivity produced by the bombardment of a target element with nuclear particles. (2) The output from radioactive substances or from high energy electromagnetic wave production in instrumentation.

**artificial reality**

See *virtual environment*.

**ARTS**

See *automated radar terminal system*.

**arytenoid**

A skeletal muscle of the larynx which is involved in controlling pitch by regulating the length of the vibrating segment of the vocal cord.

**as-built plan**

A drawing which covers property boundaries, streets bordering the site and building layout, and provides accurate scale and a north arrow.

**asbestiform mineral**

(1) Minerals which, due to their crystalline structure and chemical composition, tend to be separated into fibers and can be classed as a form of asbestos. (2) The EPA defines asbestiform as a specific type of mineral fibrosity in which the fibers and fibrils possess high tensile strength and flexibility.

**asbestos**

A generic term used to describe a number of naturally occurring fibrous, hydrated mineral silicates differing in chemical composition. They are white, gray, green, or brown. Asbestos fibers are characterized by high tensile strength, flexibility, heat and chemical resistance, and good frictional properties. Chrysotile, crocidolite, amosite, anthophyllite, and actinolite are all forms of asbestos. Exposure to asbestos fibers is known to cause a variety of diseases, including *asbestosis* (a diffuse, interstitial non-malignant scarring of the lung tissues), *bronchogenic carcinoma* (a lung cancer), *mesothelioma* (a tumor of the lining of the chest cavity or lining of the abdomen), and *cancer* of the stomach, colon, and rectum.

**asbestos abatement**

Procedures to control the release of asbestos fibers from asbestos-containing materials.

**asbestos bodies**

Dumbbell-shaped bodies that may appear in the lungs and sputum of persons who have been exposed to asbestos. These are also called ferruginous bodies.

**asbestos cement pipe**

Pipe manufactured of a mixture of asbestos fiber and Portland cement.

**asbestos-containing materials (ACM)**

Any material which contains more than 1 percent asbestos by weight which can be released



upon destruction or disturbance of the structural integrity of the material.

**asbestos fiber**

An asbestos fiber that is greater than 5 micrometers in length, with a length to width ratio equal to or greater than 3 to 1.

**asbestos standard**

Regulations promulgated by the federal Occupational Safety and Health Administration in 1986 that require major reductions in the level of airborne asbestos fibers in workplaces and that also prescribe a system of engineering controls and work practices related to asbestos. It is actually two standards, one for general industry and one for the construction industry, with somewhat different requirements.

**asbestosis**

A disease associated with chronic exposure to and inhalation of asbestos fibers. The disease makes breathing progressively more difficult and can lead to death.

**ASCE**

American Society of Civil Engineers.

**ASCI**

See *American Standard Code for Information Interchange*.

**ascorbic acid**

Vitamin C, also called cevitamic acid; a substance found in fruits and vegetables, especially citrus fruits (oranges and lemons) and tomatoes. Ascorbic acid is an essential element of the diet. Lack of vitamin C can lead to scurvy or to less severe conditions, such as delayed healing of wounds. Solutions of vitamin C deteriorate very rapidly and the vitamin is not stored in the body to any extent. Large doses of commercial preparations of ascorbic acid may cause gastrointestinal irritation. There is no general agreement as to the normal and therapeutic daily requirements for vitamin C intake.

**ASDE**

See *airport surface detection equipment*.

**asemasia**

Inability to make or comprehend signs or tokens of communication.

**asepsis**

Clean and free of microorganisms.

**aseptic**

Free from infection; sterile.

**aseptic bone necrosis**

See *dysbaric osteonecrosis*.

**aseptic technique**

Procedures designed to exclude infectious agents; laboratory or clinical techniques that do not result in the transfer of disease-producing microorganisms from one surface to another.

**ash**

The mineral content of a product remaining after complete combustion.

**ASHARA**

Asbestos School Hazard Abatement Reauthorization Act.

**ashing**

The decomposition, prior to analysis, of the organic matrix constituents of a sampling media.

**ASHRAE**

See *American Society of Heating, Refrigerating and Air Conditioning Engineers*.

**asiderosis**

Deficiency in the iron reserve of the body.

**askarel**

Generic term for a group of nonflammable synthetic chlorinated hydrocarbons that have been used as electrical insulating material. These are also referred to as *polychlorinated biphenyls*.

**as low as reasonably achievable (ALARA)**

A basic concept of radiation protection that specifies that radioactive discharges from nuclear plants and exposure of personnel to ionizing radiation be kept as far below regulatory limits as is reasonably achievable.

**ASM**

See *available seat mile*.

**ASME**

American Society of Mechanical Engineers.

**Asmussen dynamometer**

A device using a piston drive for measuring strength, in either a push or pull mode.

**aspect**

The appearance of a roadway signal conveying an indication as viewed from the direction of an approaching train; the appearance of a

cab signal conveying an indication as viewed by an observer in the cab.

**aspect ratio**

(1) With regard to asbestos fibers, the ratio of fiber length to fiber width. (2) *EPA*. The ratio of the length to width of a particle. The aspect ratio for counting structures, as defined in the transmission electron microscope (TEM) method of asbestos sample assessment, is equal to or greater than 5 to 1. (3) *OSHA*. To be counted as a fiber by the phase contrast microscopy (PCM) method of analysis, the fiber must be at least 5 micrometers in length and have a length to width ratio of at least 3 to 1.

**aspergillosis**

An infectious disease of the skin, lungs, and other parts of the body caused by certain fungi of the genus *Aspergillus*.

***Aspergillus fumigatus***

Airborne fungi that may result from composting operations and may cause human ear, lung, and sinus infections.

**asphalt**

A dark brown-to-black cement-like material containing bitumens as the predominant constituents obtained by petroleum processing. The definition includes crude asphalt as well as the following finished products: cements, fluxes, the asphalt content of emulsions (exclusive of water), and petroleum distillates blended with asphalt to make cutback asphalts.

**asphalt-rubber**

A mixture of ground rubber and bituminous concrete used as a pavement interlayer to reduce stress and prevent cracking.

**asphyxia**

(1) The state of respiratory distress or suffocation due to the lack of respirable oxygen. (2) A condition due to lack of oxygen in inspired air, resulting in loss of consciousness or actual cessation of life.

**asphyxiant**

Any commodity capable of reducing or depleting the oxygen content of a space to the point of asphyxiation. Asphyxiants may be simple or chemical. *Simple asphyxiants* are materials that can displace oxygen in the air

(e.g., nitrogen). *Chemical asphyxiants* render the body incapable of utilizing an adequate supply of oxygen (e.g., carbon monoxide). Both types of anoxia can potentially result in insufficient oxygen to sustain life.

**asphyxiation**

(1). The deprivation of oxygen caused by chemical or physical means. Chemical asphyxiants prevent oxygen transfer from the blood to the body cells. Physical asphyxiants prevent oxygen from reaching the blood. (2) That point where oxygen content is no longer at a level capable of supporting life; a cause of death resulting from a lack of sufficient oxygen; suffocation.

**aspirate**

(1) To remove (by suction) a gas or body fluid from a body cavity, from an unusual accumulation, or from a container. (2) The accidental passage of a liquid or solid substance into the lungs following attempted ingestion or during a vomiting sequence.

**aspirating aerator**

Aeration device that uses a motor-driven propeller to draw atmospheric air into the turbulence caused by the propeller to form small bubbles.

**aspiration**

A hazard to the lungs following the ingestion (accidental or on purpose) of a material, such as a solvent or solvent-containing product, when a small amount of the material is taken into or is aspirated into the lungs in liquid form. Aspiration can occur during ingestion, or if and when the material is later vomited.

**aspirator**

A hydraulic device that creates a negative pressure by forcing liquid through a restriction and increasing the velocity head.

**aspirin**

Acetylsalicylic acid, a common drug generally used to relieve pain and reduce fever, and specifically prescribed for rheumatic and arthritic disorders. Indiscriminate use of the drug may lead to toxic symptoms such as gastrointestinal disorders, ringing in the ears, headache, and, in severe toxicity, depression of heart rate.

**ASQC**

American Society for Quality Control.

**ASR**

See *airport surveillance radar*.

**ASSE**

See *American Society of Safety Engineers*.

**assembly**

(1) *General*. The concourse or meeting together of a considerable number of persons at the same place; also, the persons so gathered. The process of putting together individual pieces or components to make a whole or complete item. (2) *System Safety*. A combination of multiple components or parts grouped together to perform a single function or a specific set of functions within a system or subsystem.

**assembly line**

A work arrangement in which the product being assembled is delivered to each person who then performs a somewhat specialized task or job at a specific work site.

**assessment**

An evaluation or examination of a specific area of concern, such as a program, policy, or procedural assessment.

**assessor's map**

A map which covers property boundaries and gives the location of properties bordering the subject site.

**assignable cause**

Any identifiable source of deviation from the normal in some process or system.

**assigned protection factor (APF)**

A numerical indicator of how well a respirator can protect its wearer under optimal conditions of use. The numerical value, or assigned protection factor, is the ratio of the air contamination concentration outside a respirator to that inside the respirator. For example, an assigned protection factor of 10 means that 1/10<sup>th</sup> the workspace exposure concentration is that which is inhaled by the wearer.

**assigned vehicle**

A vehicle provided to an organizational element of a government agency or contractor by General Services Administration's (GSA) Interagency Fleet Management System for a period of more than 30 days.

**assimilable organic carbon (AOC)**

The portion of dissolved organic carbon that is easily used by microbes as a carbon source.

**assimilation**

The ability of a body of water to purify itself of pollutants. See also *color assimilation*.

**assimilative capacity**

The ability of a water body to receive wastewater and toxic materials without deleterious effects on aquatic life or the humans who consume the water.

**Assistant Regional Director**

The employee or officer regularly or temporarily in charge of a Region of the Occupational Safety and Health Administration, U.S. Department of Labor, or any other person or persons who are specifically designated to act for such employee or officer in his/her absence. The term also includes any employee or officer in the Occupational Safety and Health Administration exercising supervisory responsibilities over the Assistant Regional Director.

**assistive device**

Any tool which either enables or enhances human-machine interaction for an individual with a physical handicap.

**associated corpuscular emission**

The full complement of secondary charged particles (usually limited to electrons) associated with an x-ray or gamma-ray beam in its passage through air.

**associated equipment**

*Marine Safety*. Any system, part, or component of a boat as originally manufactured or any similar part or component manufactured or sold for replacement, repair, or improvement of such system, part, or component; any accessory or equipment for, or appurtenance to, a boat; and any marine safety article, accessory, or equipment intended for use by a person on board a boat; but excluding radio equipment, as designated by the Secretary of Transportation under 46 U.S.C. 2101.

**assumpsit**

*Law*. (Latin) A promise or engagement by which one person assumes or undertakes to do some act or pay something to another. It may be either oral or in writing, but is not under seal. It is *express* if the promisor puts his engagement in the distinct and definite language; it is *implied* where the law infers a promise (though no formal one has passed)

from the conduct of the party or the circumstances of the case.

**assumption**

The act of conceding or taking for granted. Laying claim to or taking possession of.

**assumption of liability**

As applied to the waste business, assumption of liability occurs when a licensed transporter facility automatically assumes responsibility and, accordingly, risk and liability for a generator's waste when the waste is accepted for transportation, storage, treatment, or other handling. This assumption does not, however, reduce or remove the generator's liability for responsibility.

**assumption of risk**

*Law.* The doctrine of assumption of risk, also known as *volenti non fit injuria*, means legally that a plaintiff may not recover for an injury to which he/she assents, i.e., that a person may not recover for an injury received when he/she voluntarily exposes himself to a known and appreciated danger. The requirements for the defense of assumption of risk are that a) a condition of risk must exist, b) he/she knows the condition is dangerous, c) he/she appreciates the nature or extent of the danger, and d) he/she voluntarily exposes himself/herself to the danger.

**AST**

Aboveground storage tank.

**astern**

(1) Behind a vessel. (2) Move in a reverse direction.

**asthenia**

Lack or loss of strength or energy.

**asthenic**

A Kretschmer somatotype characterized by a slender, feeble build. Also referred to as *aesthenic*. See also *Kretschmer somatotype*.

**asthenopia**

Impairment of vision, with pain in the eyes, back of the head, and the neck.

**asthma**

A disease of the bronchi, technically known as bronchial asthma. Constriction of the bronchial tube muscles, in response to irritation, allergy, or other stimulus. Symptoms include

dyspnea, wheezing, and a sense of constriction in the chest.

**astigmatism**

An error of refraction in which parallel light rays fail to come to focus on the retina, owing to differences in curvature in various meridians of the refractive surfaces (cornea and lens) of the eye. The exact cause of astigmatism is not known.

**ASTM**

See *American Society for Testing and Materials*.

**astringent**

(1) Causing contraction and arresting discharges. (2) An agent that arrests discharges. Astringents act as protein precipitants; they arrest discharge by causing shrinkage of tissue.

**astronautics**

The art and science of designing, building, and operating manned or unmanned space objects.

**astrosphere**

A structure made up of a group of radiating fibrils that converge toward the centrosome and continue in the centrosphere of a cell.

**asymbolia**

Loss of ability to understand symbols, as words, figures, gestures, and signs.

**asymmetric lift**

A manual lifting task in which the load is not equally shared by paired limbs.

**asymmetric membrane**

Membranes that are not reversible and can only desalinate efficiently in one direction.

**asymmetry**

A lack of structural correspondence between two sides of a normally or especially symmetric structure, especially pertaining to paired members.

**asymptomatic**

The lack of identifiable signs or symptoms; without symptoms.

**asymptote**

That value represented by approximately a horizontal straight line which a curve approaches as the axis approaches infinity.

**at anchor**

Held in place in the water by an anchor. Includes "moored" to a buoy or anchored vessel and "dragging anchor."

**at grade**

See *grade crossings and highway-rail crossing*.

**at grade, exclusive right-of-way**

Railway right-of-way from which all other traffic, mixed and cross, is excluded. Median strip right-of-way is included provided all crossings of the right-of-way pass over or under the median.

**at grade, mixed and cross traffic**

Railway right-of-way over which other traffic moving in the same direction or the cross directions may pass. City street right-of-way is included.

**at grade, with cross traffic**

Railway right-of-way over which no other traffic may pass, except to cross at grade-level crossings. A median strip right-of-way with grade-level crossings at intersecting streets is included.

**ATAD**

See *autothermal thermophilic aerobic digestion process*.

**ataxia**

A failure, or lack of muscular coordination.

**ATB**

See *articulated total body model*.

**ATC**

See *air traffic control*.

**ATCCC**

See *air traffic command and control center*.

**ATCO**

See *air taxi/commercial operator*.

**ATCT**

See *airport traffic control tower*.

**atelectasis**

A collapsed or airless state of the lung, which may be acute or chronic, and may involve all or part of the lung. The primary cause of atelectasis is obstruction of the bronchus serving the affected area. Symptoms include sudden obstruction of the bronchus, pain in the affected side, dyspnea and cyanosis, elevation of temperature, and a drop in blood pressure or shock.

**atherosclerosis**

A condition characterized by degeneration and hardening of the walls of the arteries and sometimes the valves of the heart, related especially to thickening of the intimal layer. See also *arteriosclerosis*.

**athetosis**

A movement disorder characterized by almost continuous involuntary slow, sinuous movements.

**athlete's foot**

A fungus infection of the skin of the foot; also called *tinea pedis*. Athlete's foot causes itching and often blisters and cracks, usually between the toes. Causative agents are *Candida albicans*, *Epidermophyton floccosum* and species of *Trichophyton*, which thrive on warmth and dampness. If not arrested, athlete's foot can cause a rash and itching in other parts of the body as well. It is likely to be recurrent, since the fungus survives under the toenails and reappears when conditions are favorable. Although athlete's foot is usually little more than an uncomfortable nuisance, the open sores it causes provide excellent sites for more serious infections. See *dermatophytoses*.

**athletic**

A Kretschmer somatotype having a stocky, muscular build with little body fat. See also *Kretschmer somatotype*.

**atlanto-occipital joint**

The junction of the atlas with the occipital bone of the skull.

**atlas**

*Anatomy*. The first cervical vertebra.

**atm**

Atmosphere.

**ATM**

See *air traffic management*.

**atmometer**

An instrument used to measure the evaporative capacity of the air.

**atmosphere**

(1) A standard unit of pressure representing the pressure exerted by a 29.92-inch column of mercury at sea level at 45° latitude and equal to 1000 grams per square centimeter.  
(2) The whole mass of air surrounding the

earth, composed largely of oxygen and nitrogen and extending to an altitude of 10 miles.

**atmosphere-supplying respirator**

A respiratory protective device which is designed to supply breathing air to the wearer. This type of respirator does not rely on the use of air from the work environment. The air is obtained from an independent source. Respirators of this type are classified as a supplied-air respirator or self-contained breathing apparatus.

**atmospheric corrosion**

Corrosion that results from exposure to the atmosphere.

**atmospheric effect**

See *greenhouse effect*.

**atmospheric pressure**

The pressure exerted by the weight of the atmosphere, equivalent to 14.7 pounds per square inch at sea level. Also equivalent to the pressure exerted by a column of mercury 760 mm high or a column of water 406.9 inches high.

**atmospheric stagnation**

A condition of light winds and poor vertical mixing that can lead to a high concentration of pollutants. Air stagnation is most often associated with fair weather, an inversion, and the sinking air of a high-pressure area.

**atmospheric window**

The wavelength range between 8 and 11  $\mu$ m in which little absorption of infrared radiation takes place.

**at. no.**

Atomic number.

**atom**

The smallest particle of an element which can not be divided or broken by chemical means. It consists of a central core called the *nucleus*, which contains *protons* and *neutrons*. *Electrons* move in orbital fashion in the region surrounding the nucleus.

**atomic absorption spectrophotometry (AAS)**

A method commonly used for the analysis of heavy metals in water.

**atomic energy**

Under the Federal Atomic Energy Act of 1954: All forms of energy released in the

course of nuclear fission or nucleus transformation.

**atomic energy defense activity**

Under the Federal Nuclear Waste Policy Act of 1982: Any activity of the Secretary of Energy performed in whole or in part in carrying out any of the following functions: naval reactors development; weapons activities including defense inertial confinement fusion; verification and control technology; defense nuclear materials production; defense nuclear waste and materials byproducts management; defense nuclear materials security and safeguards and security investigations; and defense research and development.

**atomic fission**

See *fission*.

**atomic mass**

The mass of a neutral atom of a nuclide, usually expressed in terms of atomic mass units.

**atomic mass unit**

One-twelfth the mass of one neutral carbon-12 atom equivalent to 1.6604 E-24 grams.

**atomic number**

The number of protons in the nucleus of an atom.

**atomic power**

The production of electricity through the use of a nuclear reactor.

**atomic weapon**

Under the Federal Atomic Energy Act of 1954: Any device utilizing atomic energy, exclusive of the means for transporting or propelling the device (where such means is a separable and divisible part of the device), the principal purpose of which is for use as, or for development of, a weapon, a weapon prototype, or a weapon test device.

**atomic weight**

Approximately the sum of the number of protons and the number of neutrons found in the nucleus of an atom, also known as the *mass number*.

**atomize**

To divide a liquid into extremely minute particles, either by impact with a jet of steam or compressed air, or by passage through some mechanical device.



**atomizer**

An instrument through which a liquid is sprayed to produce a fine mist.

**atrial fibrillation**

A cardiac arrhythmia characterized by extremely rapid, irregular atrial impulses, ineffectual atrial contractions, and irregular, rapid ventricular beats. Also known as *auricular fibrillation*. See also *fibrillation*.

**atrophy**

Wasting away or diminution in the size of a cell, tissue, organ, or part, from defect, failure of nutrition, or lack of use.

**atropine**

A poisonous parasympatholytic alkaloid of belladonna, used in a variety of conditions. Actions include decrease of secretions, increased heart rate and rate of respiration, and relaxation of smooth muscle tissue. It may be used to dilate pupils, for general cerebral stimulation, for relief of gastrointestinal cramps and hypermotility, and locally to relieve pain. In various combinations with other drugs, atropine may be administered orally or intramuscularly, or applied topically. *Atropine methylnitrate* and *atropine sulfate* are soluble compounds of atropine, with similar uses.

**ATSDR**

Agency for Toxic Substances and Disease Registry.

**attached growth process**

See *fixed film process*.

**attachment plug**

A device which, by insertion in a receptacle, establishes connection between the conductors of the attached flexible cord and the conductors connected permanently to the receptacle.

**attainment area**

An area considered to have air quality as good as or better than the National Ambient Air Quality Standards (NAAQS) as defined in the Clean Air Act. An area may be an attainment area for one pollutant and a non-attainment area for others.

**attendant**

(1) *Safety*. With regard to confined space entry, a trained individual who remains outside a confined space and acts as an observer of the

authorized entrants within the space, keeping in constant, though not necessarily continuous communication with them, so the attendant can immediately call rescue services if needed. (2) *Law*. One who owes a duty or service to another, or in some way depends upon him or her. One who follows and waits upon another.

**attended operation**

An operation which is attended at all times by a person who is sufficiently knowledgeable to act should the need arise.

**attention**

The general, but not highly directed, allocation of sensory-perceptual functions, possibly involving motor functions as well, to a subset of the possible inputs. See also *selective attention* and *divided attention*.

**attention span**

That length of time or number of items or tasks to which an individual can respond before performance deteriorates.

**attenuate**

To reduce in amount, concentration, intensity, strength, force, or amplitude some entity over a period of time or space.

**attenuation**

(1) *General*. The process by which a compound is reduced in concentration over time, through adsorption, degradation, dilution, and/or transformation. (2) *Acoustics*. The reduction, expressed in decibels, of the sound intensity at a designated position as compared to the sound intensity at a second position acoustically further from the source, or as a result of an intervening material. (3) *Ionizing Radiation*. The process by which a beam of ionizing radiation is reduced in intensity when passing through a material.

**attitude**

(1) See *posture*. (2) The forward orientation of a vehicle which is capable of motion in all three spatial dimensions, especially an aircraft or spacecraft. (3) An individual's feeling or opinion about some issue or expected event which will shape his/her response.

**atto**

Prefix designating 1 E-18, (a).

**attorney**

In the most general sense, this term denotes an agent or substitute, or one who is appointed and authorized to act in the place or stead of another. An agent, or one acting on behalf of another. In its most common usage, however, unless a contrary meaning is clearly intended, this term means "attorney at law," "lawyer," or "counselor at law."

**attorney at law**

Person admitted to practice law in his/her respective state and authorized to perform both civil and criminal legal functions for clients, including drafting of legal documents, giving of legal advice, and representing such before courts, administrative agencies, boards, etc.

**attorney-client privilege**

In law of evidence, the client's privilege to refuse to disclose and to prevent any other person from disclosing confidential communications between the client and his/her attorney. Such privilege protects communications between the attorney and the client made for the purpose of furnishing or obtaining professional legal advice or assistance. That privilege also permits an attorney to refuse to testify as to communications between the client and the attorney. It is important to note that the privilege belongs to the client, not to the attorney, and hence the client may waive it. Unless waived, the privilege protects a communication between privileged persons in confidence for the purpose of obtaining or providing legal assistance for the client.

**Attorney General**

Head of the U.S. Department of Justice and chief law officer of the Federal Government, represents the United States in legal matters generally and gives advice and opinions to the President and to the heads of the executive departments of the Government when so requested. In each State, there is also an Attorney General, who is the chief law officer of the state.

**attractant**

A chemical or agent that lures insects or other pests by stimulating their sense of smell.

**attraction**

The force of influence by which one object is drawn toward another.

**attractive dirt**

Any form of dirt which tends to remain attached to a surface through electrostatic forces.

**attractive nuisance**

An insurance term applicable to any existing or visible condition that may attract attention and the desire to inspect the condition or circumstance. An example would be a construction site containing interesting or unusual machinery or devices that might attract children or others for closer investigation, thereby risking harm or damage to person or property. Fencing and/or other security may be ways to control an attractive nuisance, although they may not be sufficient.

**attributable risk**

A measure of the occurrence of a specific disease or injury in those exposed to a particular situation or causal agent.

**attribute**

Some characteristic of an element or condition.

**attrition**

Wearing or grinding down of a substance by friction. A contributing factor in air pollution, as with dust.

**at-will employee**

An employee who works for a company under an at-will employment agreement.

**at-will employment**

An agreement or understanding, either written or verbal, between an employer and employee that the employer may terminate an employee at any time, with or without good reason or notice, and with no legal liability of the employer. Also referred to as *employment-at-will*.

**at. wt.**

Atomic weight.

**audible frequency range**

See *audible sound*.

**audible sound**

Sound containing frequency components between approximately 16-20 and 20,000 Hz. Also referred to as *audible frequency range*, *audible range*, and *audio frequency range*.

**audible range**

See *audible sound*.

**audio frequency range**

See *audible sound*.

**audio frequency spectrum**

See *spectra (1)*.

**audiogenic**

Resulting from sound.

**audiogenic seizure**

A reflex convulsion caused by exposure to an intense or sudden noise.

**audiogram**

A graphic or tabular record of hearing level measured at different sound frequencies produced by an audiometer in a control setting. Audiograms are used in the diagnosis and treatment of hearing loss. See also *audiometer*.

**audiologist**

A professional, specializing in the study and rehabilitation of hearing, who is certified by the American Speech-Language-Hearing Association or licensed by a state board of examiners.

**audiometer**

A frequency-controlled audio signal generator that produces pure tones at various frequencies and intensities and that is used to measure hearing sensitivity or acuity. Measurement of hearing threshold results in an audiogram, measured in decibels at selected frequencies. See also *audiogram*.

**audiometric reference level**

The sound pressure level and specification to which an audiometer has been calibrated.

**audiometric technician**

An individual who is trained to perform audiometry.

**audiometric testing room**

A specialized chamber insulated for sound and equipped for hearing acuity measurement.

**audiometric zero**

The threshold of hearing, which is equivalent to a sound pressure of  $2 \times 10^{-4}$  microbars.

**audiometry**

The testing of the sense of hearing.

**audiovisual**

The simultaneous stimulation of both the sense of hearing and the sense of sight.

**audit**

A detailed and systematic inspection or review of an occupational health and safety program, environmental program, financial operating program, or some other program, to determine compliance with company policies, practices, and procedures, as well as the regulations that are applicable to the operations and work being performed.

**audit conclusion**

Under ISO 14000, professional judgment of opinion expressed by an auditor about the subject matter of the audit, based on and limited to reasoning the auditor has applied to audit findings.

**audit criteria**

Under ISO 14000, policies, practices, procedures, or requirements against which the auditor compares collected audit evidence about the subject matter.

**audit evidence**

Under ISO 14000, verifiable information, records, or statements of fact.

**audit findings**

Under ISO 14000, results of the evaluation of the collected audit evidence compared against the agreed-upon criteria.

**audit team**

Group of auditors, or a single auditor, designated to perform a given audit; the audit team may also include technical experts and auditors-in-training.

**auditing procedures**

Compliance procedures, which include employee training in the company's mandatory standards and procedures as well as regular and unannounced audits, conducted under the direction of counsel and the corporate compliance officer to ensure compliance. See also *monitoring procedures*.

**auditor**

One who checks the accuracy, fairness, and general acceptability of business operations in general, and operating plans and procedures in specific. One who conducts an audit. See also *audit*, *independent audit*, and *internal audit*.

**auditory**

Pertaining to the sense of hearing.

**auditory absolute threshold**

See *threshold of audibility*.

**auditory aftereffect**

A phenomenon in which familiar sounds appear modulated for a period of time after listening to rapid, high-intensity impulses.

**auditory attention**

The ability to focus on a single auditory source in the presence of distracting auditory stimuli.

**auditory canal**

See *Eustachian tube*.

**auditory fatigue**

A temporary increase in auditory threshold due to prolonged intense noise or a previous auditory stimulus.

**auditory lateralization**

The determination by a person that apparent direction of a sound is either to the left or right of the midsagittal plane of the head when wearing earphones.

**auditory localization**

The process of determining the apparent direction and/or distance of an external sound source.

**auditory nerve**

That portion of the vestibulocochlear nerve which carries auditory information from the inner ear to the brain. May be referred to as *acoustic nerve*.

**auditory ossicle**

Any of the three small bones in the middle ear used for hearing: the malleus (hammer), incus (anvil), and stapes (stirrup).

**auditory sound**

See *background noise*.

**auditory stimulus**

Any stimulus which excites the cochlea to convey signals indicating sound perception to the brain.

**auditory system**

The combined structures of the external, middle, and inner ear which are involved in the function of hearing, and the acoustic nerve.

**aural**

Pertaining to the ear or hearing.

**aural insert protectors**

A form of hearing protector commonly known as earplugs. They are available in numerous configurations as foam, plastic, fine glass fiber, and wax-impregnated cotton. The three types are formable, custom-molded, and pre-molded.

**auricle**

(1) The part of the ear that projects from the head. Also called the *pinna*. (2) One of the two upper chambers of the heart.

**auricular fibrillation**

See *atrial fibrillation*.

**auricular point**

That location on the longitudinal axis of the external auditory canal at which it passes to the exterior.

**aurora**

Glowing light display in the night time sky caused by excited gases in the upper atmosphere giving off light. In the Northern Hemisphere, it is called the *aurora borealis* (northern lights); in the Southern Hemisphere, the *aurora australis* (southern lights).

**authentication**

In the law of evidence, the act or mode of giving authority or legal authenticity to a statute, record, or other written instrument, or a certified copy thereof, so as to render it legally admissible in evidence.

**authority**

Permission. Right to exercise powers; to implement and enforce laws; to exact obedience; to command; to judge. Control over; jurisdiction. Often synonymous with power. The delegated power by one person to another. The lawful delegation of power by one person to another. Power of agent to affect legal relations of principal by acts done in accordance with principal's manifestations of consent to agent.

**authority having jurisdiction**

The organization, office, agency, or individual responsible for approving equipment and installation, or a procedure.

**authorized altitude**

A published altitude representing the maximum usable altitude or flight level for an airspace structure or route segment. It is the highest altitude on a federal airway, jet route, area navigation low or high route, or other direct route for which a Minimum En Route In-

strument Flight Rules (IFR) Altitude (MEA) is designated in Part 95 at which adequate reception of navigation aid signals is assured.

**authorized entrant**

(1) As pertains to confined spaces, an employee who is authorized by the employer to enter a permit space. (2) In confined spaces, an employee who is authorized by the employer or its designee to enter a confined space.

**auto restricted zone**

An area in which normal automobile traffic is prohibited or limited to certain times, and vehicular traffic is restricted to public transit, emergency vehicles, taxicabs and, in some cases, delivery of goods.

**AutoBill**

See [automotive billing module](#).

**autoclave**

A self-locking apparatus used for the sterilization of materials by steam under pressure. The autoclave allows steam to flow around each article placed in the chamber. The vapor penetrates cloth or paper used to package the articles being sterilized. Autoclaving is one of the most effective and proven methods for destruction of all types of microorganisms. The amount of time and degree of temperature necessary for sterilization depend on the articles to be sterilized and whether they are wrapped or left directly exposed to the steam.

**autoexec.bat**

*Computing.* A text file that contains a list of commands that a computer executes every time it is started (booted) or restarted (re-booted).

**autogenous combustion**

Burning that occurs when the heat of combustion of a wet organic material or sludge is sufficient to vaporize the water and maintain combustion without auxiliary fuel.

**autogenous temperature**

Equilibrium temperature in sludge combustion where heat input from the fuel equals the heat loss and combustion is self-supporting.

**autoignition**

The ignition of a combustible material without initiation by a spark or flame; when the temperature of a material has been raised to a level at which self-sustaining combustion occurs.

**autoignition temperature**

The lowest temperature at which a flammable gas-air or vapor-air mixture ignites from its own heat source or a contacted hot surface but without the presence of a spark or flame.

**autokinesis**

Voluntary movement.

**autokinetic illusion**

An effect in which a stationary point light source in a dark background or with no visual reference frame appears to move. Also referred to as *autokinetic phenomenon*.

**autokinetic phenomenon**

See [autokinetic illusion](#).

**autoland approach**

*Aviation.* A precision instrument approach to touchdown and, in some cases, through the landing rollout. An autoland approach is performed by the aircraft autopilot which is receiving position information and/or steering commands from onboard navigation equipment. See also [coupled approach](#).

**automated control**

The use of feedback in a continuously monitored, computerized system to self-correct any output deviations.

**automated flight service station**

A station that provides interactive alphanumeric and graphic workstations for the flight service specialist.

**automated guideway**

(1) An electric railway operating without vehicle operators or other crew on board the vehicle. (2) One or more automatically controlled vehicles operating over an exclusive guideway.

**automated guideway transit**

Guided transit vehicles operating singly or in multi-car trains with a fully automated system (no crew on transit units). Service may be on a fixed schedule or in response to a passenger-activated call button. Automated guideway transit includes personal rapid transit, group rapid transit, and people mover systems.

**automated guideway transit system**

Fixed guideway transit system which operates with automated (driverless) individual vehicles or multi-car trains. Service may be on a

fixed schedule or in response to a passenger-activated call button.

**automated guideway vehicles**

Guided transit passenger vehicles operating under a fully automated system (no crew on transit units).

**automated mutual assistance vessel rescue system (AMVER)**

A facility which can deliver, in a matter of minutes, a Surface Picture (SURPIC) of vessels in the area of a potential or actual search and rescue incident, including their predicted positions and their characteristics.

**automated radar terminal system (ARTS)**

The generic term for the ultimate in functional capability afforded by several automation systems. Each differs in functional capabilities and equipment. Automated Radar Terminal System (ARTS) plus a suffix roman numeral denotes a specific system. A following letter indicates a major modification to that system. In general, an ARTS displays for the terminal controller aircraft identification, flight plan data, and other flight associated information, e.g., altitude, speed, and aircraft position symbols in conjunction with the radar presentation. Normal radar co-exists with the alphanumeric display. In addition to enhancing visualization of the air traffic situation, ARTS facilitates intra/inter-facility transfer and coordination of flight information. These capabilities are enabled by specially designed computers and subsystems tailored to the radar and communications equipment and operational requirements of each automated facility. Modular design permits adoption of improvements in computer software and electronic technologies as they become available while retaining the characteristics unique to each system.

**automated transfer information**

*Aviation.* A pre-coordinated process, specifically defined in facility directives, during which a transfer of altitude control and/or radar identification is accomplished without verbal coordination between controllers using information communicated in a full data block.

**automatic**

Self-acting, operating by its own mechanism when actuated by some impersonal influence,

as, for example, a change in current strength, pressure, temperature, or mechanical configuration.

**automatic altitude reporting**

That function of a transponder which responds to Mode C interrogations by transmitting the aircraft's altitude in 100-foot increments.

**automatic block sign system**

*Transportation.* A block signal system wherein the use of each block is governed by an automatic block signal, cab signal, or both.

**automatic carrier landing system**

U.S. Navy final approach equipment consisting of precision tracking radar coupled to a computer data link to provide continuous information to the aircraft, monitoring capability to the pilot, and a backup approach system.

**automatic direction finder (ADF)**

An aircraft radio navigation system which senses and indicates the direction to a Low/Medium Frequency (L/MF) nondirectional radio beacon (NDB) ground transmitter. Direction is indicated to the pilot as a magnetic bearing or as a relative bearing to the longitudinal axis of the aircraft depending on the type of indicator installed in the aircraft. In certain applications, such as military, ADF operations may be based on airborne and ground transmitters in the VHF/UHF frequency spectrum.

**automatic fare collection (AFC) system**

The controls and equipment that automatically admit passengers on insertion of the correct fare in an acceptable form, which may be coins, tokens, tickets, or farecards (stored value farecards must be inserted again on exit, at which point an additional fare may be required).

**automatic fire detection device**

A device designed to automatically detect the presence of fire by heat, flame, light, smoke, or other products of combustion.

**automatic interlocking**

*Transportation-Rail.* An arrangement of signals, with or without other signal appliances, which functions through the exercise of inherent powers as distinguished from those whose functions are controlled manually, and which are so interconnected by means of electric cir-



cuits that their movements must succeed each other in proper sequence; train movements over all routes being governed by signal indication.

**automatic pilot**

*Aviation.* The roll, pitch, and yaw axis of an aircraft can be controlled by use of an automatic pilot. Information from very high frequency omni-directional radio range (VOR), instrument landing systems (ILS), microwave landing systems (MLS), and other navigation aids can be coupled to the automatic pilot for en route and approach flights.

**automatic restraint system**

Any restraint system that requires no action on the part of the driver or passengers to be effective in providing occupant crash protection (e.g., air bags or passive belts).

**automatic terminal information service**

The continuous broadcast of recorded non-control information in selected terminal areas. Its purpose is to improve controller effectiveness and to relieve frequency congestion by automating the repetitive transmission of essential but routine information.

**automatic train control system**

A system so arranged that its operation will automatically result in the following: 1) A full service application of the brakes which will continue either until the train is brought to a stop, or, under control of the engineman, its speed is reduced to a predetermined rate; 2) When operating under a speed restriction, an application of the brakes when the speed of the train exceeds the predetermined rate and which will continue until the speed is reduced to that rate.

**automatic train stop system**

A system so arranged that its operation will automatically result in the application of the brakes until the train has been brought to a stop.

**automatic vehicle location system**

A system that senses, at intervals, the location of vehicles carrying special electronic equipment that communicates a signal back to a central control facility.

**automatic vehicle monitoring system**

A system in which electronic equipment on a vehicle sends signals back to a central control

facility, locating the vehicle and providing other information about its operations or about its mechanical condition.

**automation**

The increased use of mechanization and/or computerization.

**automatism**

A movement disorder in which non-reflex motor actions occur during abnormal states of consciousness.

**automobile**

(1) Any 4-wheeled vehicle propelled by fuel which is manufactured primarily for use on public streets, roads, and highways (except any vehicle operated exclusively on a rail or rails), and that either a) is rated at 6,000 pounds gross vehicle weight or less; or b) which i) is rated more than 6,000 pound gross vehicle weight, but less than 10,000 pounds gross vehicle weight; ii) is a type of vehicle for which the National Highway Traffic Safety Administration (NHTSA) Administrator determines, under paragraph b) of 49 CFR 523, average fuel economy standards are feasible; and iii) is a type of vehicle for which the Administrator determines, under paragraph b) of 49 CFR 523, average fuel economy standards will result in significant energy conservation, or is a type of vehicle which the Administrator determines, under paragraph b) of 49 CFR 523, is substantially used for the same purposes as vehicles described in a) above. (2) A privately owned and/or operated licensed motorized vehicle including cars, jeeps, and station wagons. Leased and rented cars are included if they are privately operated and not used for picking up passengers in return for fare. (3) Passenger cars, up to and including station wagons in size. *See also bus, car, minivan, motor vehicle, taxi, and vehicle.*

**automobile insurance**

(1) *General.* Insurance against the loss of or damage to a motor vehicle caused by fire, windstorm, theft, collision, or other insurable hazards, and also against legal liability from the operation of the vehicle. (2) A policy of indemnity to protect the operator and owner of a vehicle from liability to third persons as a result of the operation of the automobile. *See also insurance, collision insurance, and no-fault insurance.*

**automobile size classification**

Automobile size classifications as established by the Environmental Protection Agency (EPA), as follows: Minicompact – less than 85 cubic feet of passenger and luggage volume; Subcompact – between 85 to 100 cubic feet of passenger and luggage volume; Compact-between 100 to 110 cubic feet of passenger and luggage volume; Midsize – between 110 to 120 cubic feet of passenger and luggage volume; Large – more than 120 cubic feet of passenger and luggage volume; Two seat – automobiles designed primarily to seat only two adults. Station wagons are included with the size class for the sedan of the same name.

**automobile transporter body**

Truck body designed for the transportation of other vehicles.

**automotive billing module (AutoBill)**

This module creates non-GSA customer billing tapes and General Services Administration (GSA) interfund transactions from billing records generated in the Transportation Interface and Reporting System (TIRES) and generates monthly accounting transaction information to send to the NEAR (National Electronic Accounting and Reporting) system.

**automotive payment module (AutoPay)**

This module processes all maintenance and extended warranty vendor invoices entered into the Fleet Service Station (FSS) Fleet Management System by the Maintenance Control Centers and processes the rental authorization records for commercial rent-a-car rentals from the Fleet Management Center.

**autonomic**

Not subject to voluntary control, as the *autonomic nervous system*.

**autonomic nervous system (ANS)**

A generally efferent subdivision of the peripheral nervous system which is distributed to and directs the function of smooth muscle and glands throughout the body, normally at a subconscious level. *See also parasymphathetic and symphathetic.*

**auto-oxidation**

A self-induced oxidation process.

**AutoPay**

*See automotive payment module.*

**autophony**

The sensation of abnormal loudness of one's own voice.

**autopsy**

The detailed examination of the body following death to determine the actual cause of death. An autopsy is ordered by the coroner or medical examiner when the cause of death is unknown or the death occurred under suspicious circumstances.

**autorotation**

*Aviation.* A rotorcraft flight condition in which the lifting rotor is driven entirely by action of the air when the rotorcraft is in motion. 1) Autorotative landing/touchdown autorotation. Used by a pilot to indicate that he will be landing without applying power to the rotor. 2) Low level autorotation. Commences at an altitude well below the traffic pattern, usually below 100 feet AGL and is used primarily for tactical military training. 3) 180 degrees autorotation. Initiated from a downwind heading and is commenced well inside the normal traffic pattern. "Go around" may not be possible during the latter part of this maneuver.

**autospectral density**

*See power spectral density.*

**autothermal thermophilic aerobic digestion**

A biological digestion system that converts soluble organics to lower-energy forms through anaerobic, fermentative, and aerobic processes at thermophilic temperatures.

**autothermic combustion**

*See autogenous combustion.*

**autotrophic**

An organism that produces food from inorganic substances.

**autism**

Morbid self-absorption with extreme withdrawal and failure to relate to other persons.

**autumnal equinox**

The equinox at which the sun approaches the Southern Hemisphere and passes directly over the equator. Occurs around September 23.

**auxiliary lock**

With respect to rail operations, a smaller secondary lock adjacent to the main lock.

**auxiliary rotor**

A rotor that serves either to counteract the effect of the main rotor torque on a rotorcraft

or to maneuver the rotorcraft about one or more of its three principal axes.

**availability**

A measure of the likelihood of having a system in working order at any given time. Also referred to as *measure of availability*. Expressed in the formula:

$$\text{Availability} = \frac{\text{uptime}}{\text{uptime} + \text{maintenance time}}$$

**available flight stage length**

The average distance covered per aircraft hop in revenue services, from takeoff to landing. Derived by dividing the total aircraft miles flown in revenue service by the number of aircraft revenue departures performed.

**available for work**

To be considered "available" for purposes of eligibility for unemployment compensation, claimant must be ready, willing, and able to accept either temporary or permanent suitable employment at any time by another employer and be actually and currently attached to the labor force.

**available machine time**

That portion of the time during a task cycle in which a machine could be producing useful work but is not.

**Available Motions Inventory (AMI)**

A series of tests using equipment developed at Wichita State University with the Cerebral Palsy Research Foundation of Kansas to make objective determinations of the physical capabilities of handicapped persons.

**available process time**

That portion of the time during a processing cycle in which a worker or system could be performing useful work, but is not.

**available seat mile (ASM)**

(1) One seat transported one mile. (2) The aircraft miles flown in each inter-airport hop multiplied by the number of seats available on that hop for revenue passenger use.

**available ton mile**

(1) One ton of capacity (passengers and cargo) transported one mile. (2) The aircraft miles flown in each inter-airport hop multiplied by the capacity available (in tons) for that hop.

**available tons per aircraft mile**

The average total passenger/cargo carrying capacity (tons) offered for sale per aircraft per aircraft mile, derived by dividing the overall available ton miles by the total aircraft miles flown in revenue service.

**avascular necrosis**

See *osteonecrosis*.

**average**

An arithmetic term indicating the value arrived at by finding the sum of a number of values and dividing the sum by the number of values.

**average acceleration**

The results of the total change in velocity in a period of time divided by that time.

**average fare per unlinked passenger trip**

Passenger revenue divided by unlinked passenger trips.

**average fleet age**

The cumulative years active revenue vehicles are in service divided by the sum of all active revenue vehicles.

**average flight stage length**

The average distance covered per aircraft hop in revenue services, from takeoff to landing. Derived by dividing the total aircraft miles flown in revenue service by the number of aircraft revenue departures performed.

**average length of haul**

The average distance in miles one ton is carried. Computed by dividing total ton miles by tons of freight originated. See also *ton mile*.

**average lifetime mileage per active vehicle**

The cumulative mileage for each active vehicle from the date of manufacture through the end of the fiscal year divided by the number of active vehicles.

**average man concept**

The idea that using the average measurement on a human dimension is adequate for describing a population. It is not generally considered valid, but can be useful as a guideline.

**average number of available seats per aircraft**

Available seat-miles divided by the number of aircraft revenue miles in passenger service.

**average power**

The total amount of physical work done, involving moving objects, divided by the period of time during which it is accomplished.

**average road width**

The average width of the travelway.

**average vehicle fuel consumption**

A ratio estimate defined as total gallons of fuel consumed by all vehicles, divided by the total number of vehicles (for average fuel consumption per vehicle) or the total number of households (for average fuel consumption per household).

**average vehicle miles traveled**

A ratio estimate defined as total miles traveled by all vehicles, divided by the total number of vehicles (for average miles traveled per vehicle), or the total number of households (for average miles traveled per household).

**average velocity**

The total distance traveled in a period of time divided by that time value.

**average weekday**

*Transportation.* A representative weekday in the operation of the transit system computed as the mathematical average of several typical weekdays selected at random throughout the year. A typical weekday is one where there are no anomalies such as high ridership due to extra service added for a convention, or low ridership due to a snowstorm. Average Saturday and Sunday data, including holiday service, are determined the same way.

**averaging time**

The time period over which a function is measured, yielding a time-weighted average.

**avg.**

Average.

**Aviation Act**

Federal law that created the Federal Aviation Administration (FAA) which is responsible for the regulation of aviation including aircraft safety, aircraft marking, etc. *See also Federal Aviation Administration.*

**aviation gasoline**

All special grades of gasoline for use in aviation reciprocating engines, as given in the American Society of Testing and Materials (ASTM) Specification D910. Includes all refinery products within the gasoline range that

are to be marketed straight or in blends as aviation gasoline without further processing (any refinery operation except mechanical blending). Also included are finished components in the gasoline range which will be used for blending or compounding into aviation gasoline.

**aviation gasoline blending components**

Naphthas that are used for blending or compounding into finished aviation gasoline (e.g., straight-run gasoline, alkylate, and reformat). Excludes oxygenates (alcohols and ethers), butane, and pentanes plus.

**aviation mode**

Consists of airways and airports; airplanes, helicopters, and other flying craft for carrying passengers and cargo.

**aviation weather service**

A service provided by the National Weather Service (NWS) and Federal Aviation Administration (FAA) which collects and disseminates pertinent weather information for pilots, aircraft operators, and Air Traffic Control (ATC). Available aviation weather reports and forecasts are displayed at each NWS office and FAA Flight Service Station (FSS).

**aviator's breathing oxygen (ABO)**

A grade of commercial oxygen for high-altitude flying which has no water content.

**aviator's vertigo**

A disturbance in the pilot's orientation with respect to the earth caused by a conflict between gravitational and visual cues.

**avionics**

Communications, navigation, flight controls, and displays.

**Avogadro's law**

Equal volumes of perfect gases at the same temperature and pressure contain the same number of molecules. *See also Avogadro's number.*

**Avogadro's number**

One of the fundamental physical constants. It is expressed as  $6.022 \times 10^{23}$  atoms per gram-atomic weight (or molecules per gram-atomic weight). It is an expression of the number of atoms in a gram-atomic weight of any element. *See also Avogadro's law and mole.*

**avoidable accident**

Any accident which can be or could have been prevented by the implementation of appropriate controls/hardware, environmental conditions, or behaviors.

**avoidable consequences doctrine**

*Law.* Imposes duty on a person injured to minimize damages. The general rule relating to duty of a party who has been wronged by breach of contract to mitigate damages (i.e., not sit idly by and allow damages to accumulate). This doctrine basically provides that one injured by the tort of another is not entitled to recover damages for any harm that he/she could have avoided by the use of reasonable effort.

**avoidable delay**

A work element involving a pause or interruption which is unnecessary, due to factors under worker control, and which is not calculated for in standard time figures.

**avoirdupois**

A common system of weight used in English-speaking countries for all commodities except drugs, precious stones, and precious metals.

**avulsion**

The tearing away of a body part.

**A-weighted sound level**

The sound level determined by employing the A scale of a sound level meter, or other noise survey meter equipped with this weighting network, and expressed as dBA.

**AWQC**

See *ambient water quality criteria*.

**AWS**

American Welding Society.

**axial flow**

The flow of fluid in the same direction as the axis of symmetry of a tank or basin.

**axial flow pump**

A type of centrifugal pump in which fluid flow remains parallel to the flow path and develops most of its head by the lifting action of the vanes.

**axilla**

The somewhat hollow region beneath the junction of the shoulder and trunk. Also referred to as the *armpit*.

**axillary arm circumference**

The surface distance around the arm at level of the axillary fold. Measured with the individual standing erect and the arms hanging naturally at the sides.

**axillary fold**

The junction of the torso skin and the arm skin beneath the shoulder at the axilla.

**axis**

(1) The second cervical vertebra. (2) A graphical or imaginary line representing one of the dimensions in a coordinate system, at which the value of all other dimensions is zero.

**axon**

The long outgrowth of the body of a nerve cell which conducts impulses from the body toward the next neuron; sometimes spelled axone. See also *neuron*.

**Ayerza's disease**

A form of erythremia marked by chronic cyanosis, chronic dyspnea, chronic bronchitis, bronchiectasis, hepatosplenomegaly and hyperplasia of bone marrow, and associated with sclerosis of the pulmonary artery.

**azeotrope**

A liquid mixture that has a constant boiling point different from that of its constituents and that distills without change of composition.

**azimuth**

A magnetic bearing extending from a microwave landing system navigation facility.

**azotemia**

An excess of urea or other nitrogenous bodies in the blood.

# B

## **B-10 life**

The rated life defining the number of revolutions that 90 percent of a group of identical bearings will complete before first evidence of failure develops.

## **"B" basis allowables**

The mechanical strength values specified by material producers and/or suppliers such that at least 90 percent of the materials they produce or supply will meet or exceed the specified values with a 95 percent confidence level.

## **B display**

A sound display in which the data are presented on a rectangular coordinate system with range and azimuth comprising the axes. Also referred to as *range-bearing display*.

## **B-horizon**

The intermediate soil layer, usually having a high clay content, where minerals and other particles washed down from the A-horizon accumulate.

## **B scale**

A sound weighing system which approximates the response characteristics of the human ear in the 40- to 70-phon equal loudness contour range.

## **B shift**

*See second shift.*

## **B-weighted sound pressure level**

That sound pressure level measured using the B scale. Represented as dB(B). *See also A-weighted sound pressure level.*

## **Babes-Ernst granules**

Metachromatic granules present in many bacterial cells.

## **Babinski reflex**

A reflex action of the toes, indicative of abnormalities in the motor control pathways leading from the cerebral cortex and widely used as a diagnostic aid in disorders of the central nervous system. It is elicited by a firm stimulus (usually scraping) on the sole of the foot, which results in dorsiflexion of the great toe and fanning of the smaller toes. Normally such a stimulus causes all the toes to bend downward. Also called *Babinski's sign*.

## **BAC**

Biologically active carbon. *See also Blood Alcohol Concentration.*

## **bacillary**

Pertaining to bacilli or to rod-like structures.

## **bacillemia**

The presence of bacilli in the blood.

## **bacillicide**

An agent that destroys bacilli.

## **bacilluria**

The presence of bacilli in the urine.

## **bacillus**

The shape of a bacteria cell, also commonly referred to as a *rod*. Bacilli (plural) are generally shaped like a cylinder. They may also be curved, spiral, or helical shaped. Bacilli that are curved are designated as *vibrios*, spiral rods are designated as *spirilla*, and helical rods are designated *spirochetes*.

## **back**

(1) *Anatomy*. The posterior aspects of the ribs, muscles, and all other tissues associated with the posterior trunk/torso from the thoracic vertebrae to the base of the spine. (2) *Law*. To endorse; to sign on the back; to sign generally by way of acceptance or approval; to substantiate; to countersign; to assume financial responsibility for.

## **back chute**

An old channel no longer used that may be located behind an island adjacent to the present navigable channel. It is sometimes used during high water stages to navigate without having to buck the strong currents in the main channel.

## **back curvature**

The surface distance across the back as measured from the right midaxillary line at the posterior axillary fold level to the corresponding point on the left. Measured with the individual standing erect and the arms hanging naturally at the sides.

## **back door cold front**

A cold front moving south or southwest along the Atlantic seaboard of the United States.

## **back 'er down**

To stop headway of a tow.



**back injury**

Any injury involving the spine, the spinal cord, the nerves exiting from the spinal cord through the spine, a rib-vertebral junction, and/or the muscles of the back.

**back pressure**

Pressure due to a force operating in a direction opposite to that required.

**back siphonage**

A backflow of water of questionable quality that results from a negative pressure within the water distribution system.

**back to work agreement**

An agreement between union and employer covering terms and conditions upon which employees will return to work following settlement of a strike.

**back up**

To kill headway; to flank or twist tow at foot of crossing or head of bend.

**backache**

Any pain in the back, usually the lower part. The pain is often dull and continuous, but sometimes sharp and throbbing. Backache, or lumbago, is one of the most commonly encountered ailments and can be caused by a wide variety of disorders, some serious and some not. Occasionally, backache is a symptom of spinal arthritis, peptic ulcer, enlargement of the pancreas, sciatica, diseases of the kidney, or other serious disorders, but usually backache is caused simply by strain of the back in such a way that the bones, ligaments, nerves, and muscles of the spine are compressed or stretched. A sudden action, using muscles that are already fatigued or out of condition, is particularly likely to cause acute strain. A sharp and persistent pain, following the use of unusual force against something could indicate a slipped disk or sacroiliac strain.

**backbone**

See *spine*.

**backdating**

Predating a document or instrument prior to the date it was actually drawn. The negotiability of an instrument is not affected by the fact that has been backdated.

**backfill**

The material used to refill a ditch or excavation, or the process of refilling.

**backflow**

(1) Flow reversal in a water distribution system that may result in contamination due to a cross-connection. (2) Abnormal backward flow of fluids; regurgitation.

**backflow prevention device**

A device used to prevent cross-connection or backflow of non-potable water into a potable water system. See also *backflow*.

**background concentration**

See *background level*.

**background contamination**

(1) Contamination introduced accidentally into dilution waters, reagents, rinse water, or solvents that can be confused with constituents in the sample being analyzed. (2) Substance in the air that is typically present from sources other than those from which one is trying to assess an exposure.

**background level**

(1) In air pollution control, the concentration of air pollutants in a definite area during a fixed time prior to the starting up or on the stoppage of a source of emission under control. Also referred to as *background concentration*. (2) In toxic substances monitoring, the average presence in the environment, originally referring to naturally occurring phenomena.

**background luminance**

The luminous intensity of a region within which a target is to be viewed or detected.

**background noise**

Noise which is coming from sources other than that which is being measured. The total of all sources of interference in a system, apart from the signal. Simply referred to as *noise*. Also known as *auditory ground*.

**background processing**

The data processing or transmission which is performed secondary to a primary operation or higher priority operations.

**background radiation**

That which arises from radioactive material, other than that which is being measured. Background radiation due to cosmic rays and natural radioactivity is always present.

**background soil pH**

The pH of the soil prior to the addition of substances that alter the hydrogen ion concentration.



**backhaul**

In freight transportation, to carry a shipment back over a segment of a route already covered.

**backing line**

A line used on a tow to keep barges from running ahead.

**backing rudders**

See *flanking rudder*.

**backing wind**

A wind that changes direction in a counterclockwise sense (e.g., north to northwest to west).

**backlands**

A term of no very definite import, but generally signifying lands lying back from (not contiguous to) a highway or water course.

**backlash**

A control system response in which the direction of movement is momentarily reversed when the movement of a control is stopped.

**backlight**

The use of a lighting source behind an object to separate that object or region from the background.

**backrest**

Any structure which is capable of supporting the back.

**backrest reference plane**

The plane established by a backrest.

**backrest-to-seat angle**

See *seatback angle*.

**backup**

A copy of a file on a computer hard drive, diskette, or Zip disk, that is kept in case the original is lost or damaged. It is a good practice to keep backup copies of all important files.

**backward chaining**

A reasoning or control strategy in which the beginning point is the final or desired state with the process extending backward to a known point. Synonymous with *goal-oriented problem solving*.

**backward masking**

A type of masking in which the masking stimulus occurs following the test stimulus.

**backwash**

A high-rate reversal of flow for the purpose of cleaning or removing solids from a filter bed or screening medium.

**backwash rate**

The flow rate used during filter backwash, when the direction of flow through the filter is reversed for cleaning.

**backwater**

(1) Water in a stream which, in consequence of some dam or obstruction below, is detained or checked in its course, or flows back. (2) Water backed up by a tributary stream. (3) An area of calm water unaffected by the current of a stream.

**backwater curve**

The term applied to the profile of the water surface above a dam or other obstruction in a channel. This may also be stated as the effect on the natural water surface profile of either of two confluent streams upstream from their confluence due to flow conditions in the other stream.

**backyard boatbuilder**

Person who builds a boat for his own use and not for the purposes of sale. A backyard boatbuilder may subcontract all work.

**Bacon-Davis Act**

Federal law (1931) granting the Secretary of Labor power to set wage rates on public construction work to meet wages in the private sector (40 U.S.C.A. § 276a).

**BACT**

See *best available control technology*.

**bacteria**

(1) Nonspore-forming or non-motile microorganism. Term is applied loosely to any microorganism of the order *Eubacteriales* and popularly called *germ*. Bacteria are one-celled organisms visible only through a microscope. There are many varieties, only some of which cause disease. Most are non-pathogenic, and many are useful. Bacteria are forms of plant life, and are found almost everywhere. They reproduce about every 20 minutes. Their population remains in check, however, since many bacteria feed on each other. Bacteria are classified into three basic groups according to their shape. The rod-shaped bacteria are called *bacilli*, the spiral-

shaped bacteria are named *spirilla*, and dot-shaped bacteria are referred to as *cocci*. The latter may appear in pairs (*diplococci*), in chains like strings of beads (*streptococci*) or in clusters that resemble a bunch of grapes (*staphylococci*). Helpful bacteria existing in the human intestine feed on other microscopic organisms that might be harmful. They also produce some vitamins, including the vitamin B complex and vitamins C and K. Most pathogenic bacteria that invade the body produce toxins. The body's defenses fight back against the invader by rushing leukocytes (white blood cells) and antitoxins to the area of infection; some of the leukocytes engulf the bacteria while the antitoxins neutralize the poisons. The extra blood supply contributes to the inflammatory process. The resulting fever and pain also help by enforcing rest and thus conserving the body's energies to fight off the invader. (2) Microscopic living organisms which can aid in pollution control by consuming or breaking down organic matter in sewage, or by similarly acting on oil spills or other water pollutants. Bacteria in soil, water, or air can also cause human, animal, and plant health problems. The singular form of bacteria is *bacterium*.

**bactericidal effectiveness**

A measure of the ability of various regions of the ultraviolet spectrum to kill bacteria. May also be referred to as *germicidal effectiveness*.

**bactericidal lamp**

A light source outputting a high level of ultraviolet-C radiation. Also known as *germicidal lamp*.

**bactericide**

Any substance that kills bacteria.

**bacterid**

A skin condition due to hypersensitivity to a bacterial infection.

**bacteriocidin**

A bactericidal substance present in the blood.

**bacterioclasis**

The breaking up of bacteria into fragments.

**bacteriologist**

An expert in the study of bacteria.

**bacteriolysin**

A substance formed in the blood as a result of

infection, and capable of destroying the bacteria causing the infection.

**bacteriophage**

A virus that destroys bacteria. Several varieties exist, and usually each attacks only one kind of bacteria. Certain types of bacteriophages attach themselves to the cell membrane of the bacterium and instill a charge of DNA into the cytoplasm. DNA carries the genetic code of the virus, so that rapid multiplication of the virus can and does take place inside the bacterium. The growing viruses act as parasites, using the metabolism of the bacterial cell for growth and development. Eventually the bacterial cell bursts, releasing many more viruses capable of destroying similar bacteria.

**bacteriosis**

Pertains to any disease or abnormal condition caused by a bacterium.

**bacteriostat**

A substance that inhibits or retards the growth of bacteria but does not necessarily kill them. Also known as *bacteriostatic agent*.

**bacteriostatic agent**

See *bacteriostat*.

**bacterium**

See *bacteria*.

**bad character**

Absence of moral virtue; the predominance of evil habits in a person. In law of evidence, such character may be shown to affect credibility of a witness by introduction of records of convictions for crimes or by reputation.

**bad faith**

(1) *General Law*. The opposite of "good faith," generally implying or involving actual or constructive fraud, or a design to mislead or deceive another, or neglect or refusal to fulfill some duty or some contractual obligation, not prompted by an honest mistake as to one's rights or duties, but by some interested or sinister motive. The term "bad faith" is not simply bad judgment or negligence, but rather it implies the conscious doing of a wrong because of dishonest purpose or moral obliquity. It is different from the negative idea of negligence in that it contemplates a state of mind affirmatively operating with furtive design or ill will. (2) *Insurance*. Bad faith on the part

of the insurer is any frivolous or unfounded refusal to pay proceeds of a policy; it is not necessary that such refusal be fraudulent. For purposes of an action against an insurer for failure to pay a claim, such conduct imports a dishonest purpose and means a breach of a known duty (i.e., good faith and fair dealing), through some motive of self-interest or ill will; mere negligence or bad judgment is not bad faith.

**bad motive**

Intentionally doing a wrongful act knowing at the time that it is wrongful. *See also bad faith.*

**bad title**

One which conveys no property to the purchaser of the estate. One which is so radically defective that it is not marketable, and hence such that a purchaser cannot be legally compelled to accept it. *See also marketable title.*

**badger**

To harass, pester, or bedevil persistently, especially in a manner likely or designed to confuse, annoy, or wear down.

**baffle**

(1) A plate used to provide even distribution, or to prevent short-circuiting or vortexing of flow entering a tank or vessel. (2) A partition used to shield/absorb sound or light energy transmission. (3) To confound or confuse.

**baffle chamber**

In incinerator design, a chamber designed to promote the settling of fly ash and coarse particulate matter by changing the direction and/or reducing the velocity of the gases produced by the combustion of the refuse or sludge.

**bagasse**

Crushed sugar cane or sugar beet refuse from sugar making.

**bagassosis**

A lung disease, or pneumoconiosis, produced as a result of the inhalation of the dust of bagasse, the waste of sugar cane after the sugar has been extracted. Bagasse itself, which is moist and recently ground, is not believed to cause this disease. It is similar to farmer's lung disease. *See also farmer's lung disease and bagasse.*

**baghouse filter**

Large fabric bag, usually made of glass fibers, used to eliminate intermediate and large

(greater than 20 microns in diameter) particles. This device operates in a way similar to the bag of an electric vacuum cleaner, passing the air and smaller particulate matter, while entrapping the larger particulates.

**bakeout**

The procedure of overheating a new building or space for several days before occupancy and then flushing it out with 100% outside air to remove contaminants that may contribute to poor indoor air quality.

**balance**

(1) A condition in which working times, tasks, activities, and output are coordinated between the hands of an individual worker, between workers, or between groups so that an operation proceeds smoothly without building excessive inventory or wasting time. (2) A condition of stable posture in which muscle forces exactly counteract the gravitational or other forces imposed on the body. (3) A condition in which the outputs from all speakers in an audio system provide the same output intensity. (4) The difference between the sum of debit entries minus the sum of credit entries in an account. If positive, the difference is called debit balance; if negative, a credit balance.

**balance of trade**

The difference between a country's total imports and exports; if the exports exceed the imports, a "favorable" balance of trade exists.

**balanced motion pattern**

A sequence or succession of movements using both the right and left hands/arms which enables the worker to establish and maintain coordination and an efficient rhythm.

**balanced transportation**

*See intermodalism.*

**balancing by dampers**

Method for designing a local exhaust system and its ductwork using adjustable dampers to distribute airflow after system installation.

**balancing by static pressure**

Method for designing a local exhaust system and its ductwork by selecting the duct diameters that generate the static pressure to distribute the desired airflow throughout the system without the use of dampers.

**balancing delay (BD)**

The waiting or non-productive time of one hand/arm of a single worker or of another worker or group in an operation due to a lack of balance.

**balancing of equities**

See *equity*.

**balancing test**

A constitutional doctrine in which the court weighs the right of an individual to certain rights guaranteed by the Constitution with the rights of a state to protect its citizens from the invasion of their rights; used in cases involving freedom of speech and equal protection.

**Balantidium**

A genus of ciliated protozoa, including many species found in the intestine in vertebrates and invertebrates.

**Baldrige Award**

See *Malcolm Baldrige National Quality Award*.

**balefill**

A land disposal site where solid waste material is compacted and baled prior to disposal.

**baler**

A machine used to compress and bind solid recyclable materials such as cardboard or paper.

**baling**

Compacting solid waste into blocks to reduce volume and simplify handling.

**balk**

That customer or user behavior of not participating in an activity or entering a line because of some real or perceived objectionable quality associated with that activity or line, such as its length or waiting period.

**Balkan frame**

An apparatus for continuous extension in treatment of fractures of the femur, consisting of an overhead bar, with pulleys attached, by which the leg is supported in a sling.

**ball-of-foot circumference**

The maximum surface distance measured around the distal ends of the protuberances of the metatarsal bones of the foot. Measured with the individual standing erect, with both feet on the floor, and the body weight equally distributed on both feet.

**ball valve**

A valve utilizing a rotating ball with a hole through it that allows straight-through flow in the open position.

**ballast**

(1) An electrical transformer for producing the required current, voltage, and wave form to operate certain types of luminaries. (2) Any heavy substance, as sand, stone, etc., laid in the hold of a vessel to steady it. (3) Gravel or broken stone laid down as a stabilizer for a rail bed. (4) Material placed on a track bed to hold the track in line and elevation and to distribute its load. Suitable material consists of hard particles (e.g., crushed rock, slag, gravel) that are stable, easily tamped, permeable, and resistant to plant growth.

**ballast water**

Any water and associated sediments used to manipulate the trim and stability of a vessel. It usually must be treated as an oily wastewater.

**ballism**

A movement disorder characterized by flinging movements of the limbs. Also called *ballismus*.

**ballismus**

See *ballism*.

**ballistics**

The science of gun examination frequently used in criminal cases, especially cases of homicide, to determine the firing capacity of a weapon, its ability to fire, and whether a given bullet was fired from a particular gun.

**ballistic lift**

A ballistic movement in which an object is being lifted, with the momentum resulting from the initial motion moving the object through much of the terminal portion of the trajectory.

**ballistic motion**

See *ballistic movement*.

**ballistic movement**

A rapid, gross, relatively smooth change in position of a bodily extremity which is initiated by one or more protagonist muscles which are active only during the initial phase of the motion. May also be referred to as *ballistic motion* and/or *preprogrammed movement*.

**ballistic separator**

A machine that sorts organic from inorganic matter for composting.

**ballistocardiography**

Graphic recording of forces imparted to the body by cardiac ejection of blood.

**ballistophobia**

A morbid dread or fear of missiles.

**balloon**

A lighter-than-air aircraft that is not engine driven.

**balloon freight**

Lightweight freight.

**balm**

(1) *See* **balsam**. (2) A soothing or healing medicine.

**balsam**

A semi-fluid, fragrant, resinous vegetable juice. It is used in various preparations to treat irritated or denuded areas of the skin and mucous membranes.

**Ban-Lon**

A fabric made from a combination of nylon, polyester, and other fiber blends.

**band**

(1) *General*. A strip that constricts or binds a part. (2) *Acoustics*. A segment of the frequency spectrum of noise.

**band application**

In pesticides, the spreading of chemicals over, or next to, each row of plants in a field. *See also* **emissions trading**.

**band-pass**

Pertaining to a limited range of frequencies which are transmitted or allowed beyond a certain point within a system.

**band-pass filter**

A filter with a single transmission band extending from lower to upper cutoff frequencies.

**band pressure level**

The sound pressure level within a specified frequency bandwidth.

**band rejection**

*See* **bandstop**.

**bandage**

A strip or piece of gauze or other fabric for wrapping or covering any part of the body.

Bandages may be used to stop the flow of blood, to provide a safeguard against contamination, or to hold a medicated dressing in place. They may also be used to hold a splint in position or otherwise immobilize an injured part of the body to prevent further injury and to facilitate healing.

**bandscreen**

*See* **traveling water screen**.

**bandstop**

Pertaining to a limited range of frequencies which are not allowed to pass through a system, or which pass at a much lower intensity than the higher and lower frequencies. Synonymous with *band rejection*.

**bandwidth**

(1) That range of continuous frequencies capable of being processed or output by a system. (2) That maximum rate at which information can be transferred over a channel, typically with units in some multiple of bits per second.

**bang-bang control**

A type of discrete system control using relays to control input and in which the operator moves a control from essentially maximum deflection in one direction to essentially maximum deflection in another direction.

**bank**

(1) That excess amount or material or numbers of product which are allowed to accumulate at some point in a production line or operation without being currently worked to provide for reasonable fluctuations in flow. (2) The elevation of the outer margin relative to the inner margin of the curves on a roadway. (3) To roll an aircraft about its longitudinal axis. (4) A place of storage for such materials as blood (blood bank), or for other human tissue (bone bank, eye bank, skin bank, etc.) to be used in reparative surgery. (5) An institution, usually incorporated, whose business it is to receive money on deposit, cash checks or drafts, discount commercial paper, make loans, and issue promissory notes payable to bearer, known as bank notes.

**bank sand**

Sand excavated from a natural deposit, usually not suitable for use in filter processing or grading.



**banking**

A system of recording qualified air emission reductions for later use in bubble, offset, or netting transactions.

**bar**

(1) Shortened for *barometer*. (2) A unit or pressure equal to 0.9869 atmospheres,  $10^6$  dyn/cm<sup>2</sup>, and 14.5 lb/in<sup>2</sup>. (3) A structure that hinders or impedes. (4) The court, in its strictest sense, sitting in full term; the presence, actual or constructive, of the court. (5) A submerged or emerged mound, ridge, or succession of ridges of sand or other material extending across the bottom and which may obstruct navigation.

**bar association**

An association of members of the legal profession.

**bar chart**

See *bar graph*, *Gantt chart*.

**bar code**

A set of parallel lines of differing widths which contain coded information.

**bar code reader**

See *bar code scanner*.

**bar code scanner**

A laser-based device which views a bar code and transmits the information to a computer. Also referred to as *bar code reader*.

**bar graph**

A graphical representation of the frequency of occurrence within a set of discrete groupings or values in which the length of the bar is proportional to frequency. See also *Gantt chart*.

**bar screen**

(1) In wastewater treatment, a device used to remove large solids. (2) A screening device that utilizes mechanically operated rakes to remove solids retained on a stationary bar rack.

**Bárány chair**

A rotating chair used for vestibular or nystagmus experimentation.

**barbituism**

A toxic condition produced by use of barbital and its derivatives.

**barbiturate**

One of a group of organic compounds derived from barbituric acid, and commonly described as *sleeping pills*.

**barbituric acid**

A compound C<sub>4</sub>H<sub>4</sub>N<sub>2</sub>O<sub>3</sub>, the parent substance of barbiturates.

**bare conductor**

See *conductor*.

**bareback**

Tractor without its semitrailer.

**barf bag**

Common slang for a plastic disposable bag used for collecting or capturing expelled vomitus during motion sickness.

**bargaining unit**

Labor union or group of jobs authorized to carry on collective bargaining on behalf of employees. A particular group of employees with a similar community of interest appropriate for bargaining.

**barge**

(1) A non-powered, flat bottom, shallow draft vessel including river barges, scows, car floats, and lighters. The term does not typically include ship-shaped or deep draft barges. (2) Shallow, non-self-propelled vessels used to carry bulk commodities on rivers and the Great Lakes. (3) A non-self-propelled vessel. See also *boat* and *tanker*.

**barge carriers**

Ships designed to carry barges. Some are fitted to act as full container ships and can carry a varying number of barges and containers at the same time.

**baritosis**

A form of pneumoconiosis resulting from the inhalation of barium sulfate or other barium compounds.

**barium**

A chemical element, atomic number 56, atomic weight 137.34, symbol Ba.

**barium sulfate**

A fine, white, bulky powder, used as an opaque medium for x-ray examination of the digestive tract.

**barium test**

X-ray examination using a barium mixture to help locate disorders in the esophagus, stom-

ach, duodenum, and the small and large intestines.

**bark pocket**

See *pitch and bark pocket*.

**barnacles**

A marine crustacean with a calcareous shell that attaches itself to submerged objects.

**barn door**

One of a set of adjustable light shields which may be used in conjunction with a luminaire to partially direct and control the luminance emitted from the luminaire.

**baroclinic**

The state of the atmosphere where surfaces of constant pressure intersect surfaces of constant density. On an isobaric chart, isotherms cross the contour lines and temperature advection exists.

**baroclinic instability**

A type of instability arising from a meridional (north to south) temperature gradient, a strong vertical wind speed shear, temperature advection, and divergence in the flow aloft. Many mid-latitude cyclones develop as a result of this instability.

**barodontalgia**

A form of decompression sickness resulting in tooth pain from the expansion of trapped air within a tooth or between a filling and the tooth material.

**barograph**

A continuous recording barometer.

**barometer**

An instrument used to measure atmospheric pressure.

**barometric condenser**

A condenser in which vapor is condensed by direct contact with water.

**barometric damper**

A pivoting plate used to regulate the amount of air entering a duct or flue to maintain a constant draft within an incinerator.

**barometric leg**

- (1) A condensate discharge line submerged below the liquid level of an atmospheric tank.
- (2) A gravity tailpipe from a vacuum barometric condenser.

**barometric pressure**

Ambient or local pressure surrounding a gauge, evaporator shell, vent pipe, etc.

**barometric tendency**

See *pressure tendency*.

**barosinusitis**

Pain in the sinus due to rapid changes in atmospheric air pressure.

**barotalgia**

That sensation of pressure or ear pain due to an inequality of air pressure between the middle ear and the environment. May be referred to as *ear squeeze*.

**barotitis media**

Barotrauma to the middle ear.

**barotrauma**

Any injury resulting from expansion or contraction of gases in closed spaces within certain structures of the body due to pressure changes in the ambient environment.

**barotropic**

A condition in the atmosphere where surfaces of constant density parallel surfaces of constant pressure.

**barrel (bbl)**

According to the Federal Oil Pollution Act of 1990, a measure equal to forty-two United States gallons at 60 degrees Fahrenheit.

**barrier**

(1) A control (device, mechanism, structure, sign, etc.) intended to prevent the transfer of energy from one element of a system to another. (2) Any object, individual, or structure which impeded progress toward a goal or which prevents entry to a region for safety reasons.

**barrier landscape water renovation system (BLWRS)**

A wastewater treatment and denitrification system where wastewater is applied to the top of a mound of soil overlaying a water barrier and microbes oxidize soluble organics as the water percolates through the soil.

**barrier coating(s)**

A layer of a material that acts to obstruct or prevent passage of something through a surface that is to be protected, e.g., grout, caulk, or various sealing compounds. Sometimes used with polyurethane membranes to prevent



corrosion or oxidation of metal surfaces, chemical impacts on various materials, or, for example, to prevent soil-gas-borne radon from moving through walls, cracks, or joints in a house.

**barrier cream**

A protective viscous substance that may be used for preventing skin contact with harmful agents and/or percutaneous absorption of toxic materials. Used as a supplement (not a replacement) to personal protective equipment.

**barrier equivalent velocity (BEV)**

The effective velocity at which a vehicle impacts a barrier in crash testing.

**barrier free**

An ideal condition in which handicapped individuals have full and equal access to all facilities accessible to able-bodied individuals.

**barrier guard**

Any protective device designed to prevent access to hazardous areas, or to prevent inadvertent operation of controls or equipment.

**barrier remediation**

Exhaust radon from the enclosure.

**BARS**

See *behavior-anchored rating scale*.

**Barthel Index (BI)**

A numerical score based on 10 items of a physically disabled individual's ability to care for himself or herself by performing some of the activities of daily living.

**barylalia**

Indistinct, thick speech, resulting from a lesion of the central nervous system.

**basal**

(1) Pertaining to a base; fundamental. (2) In physiology, pertaining to the lowest possible level, resting level.

**basal application**

In pesticides, the application of a chemical on plant stems or tree trunks just above the soil line.

**basal cell carcinoma**

A cutaneous cancer of relatively low-grade malignancy, arising from the basal layers of the epidermis. See also *carcinoma*.

**basal conditions**

Those conditions under which the basal metabolic rate measures are taken: (a) fast for at least 12 hours, (b) following a night of restful sleep, (c) no strenuous exercise since sleep, and (d) comfortable, relaxed conditions with the air temperature about 70-75°F, depending on clothing.

**basal metabolic rate (BMR)**

(1) Rate of heat production by the human body under neutral conditions. (2) That energy expenditure per unit time by the body while an individual is awake, but at rest under basal conditions.

**basal metabolism**

That minimal metabolism required to maintain cellular function.

**basal temperature**

The normal body temperature of a healthy individual following sleep in the morning.

**base**

(1) The lower part of an object, or the broadest part of the conical or pyramidal structure. (2) The main ingredient of a compound. (3) A compound that reacts with an acid to form a salt; another term for *alkali*. It turns litmus paper blue.

**base period**

(1) *General*. The reference period of time (year, month, etc.) against which some current period is judged. (2) *Transit*. The time of day during which vehicle requirements and schedules are not influenced by peak-period passenger volume demands (e.g., between morning and afternoon peak periods). At this time, transit riding is fairly constant and usually low to moderate in volume when compared with peak-period travel. Also referred to as *off-peak period*.

**base time**

See *normal time*.

**base wage rate**

The hourly monetary compensation paid to a normal operator working at a standard pace on a specified task.

**baseline**

(1) A sample used as a comparative reference point when conducting further tests or calculations. (2) According to the Clean Air Act of 1990: The annual quantity of fossil fuel

consumed by an affected unit, measured in millions of British Thermal Units (mmBtus), calculated as follows:

a) For each utility unit that was in commercial operation prior to January 1, 1985, the baseline shall be the annual average quantity of mmBtus consumed in fuel during calendar years 1985, 1986, and 1987, as recorded by the Department of Energy pursuant to Form 767. For any utility unit for which such form was not filed, the baseline shall be the level specified for such unit in the 1985 National Acid Precipitation Assessment Program (NAPAP) Emissions Inventory, Version 2, National Utility Reference File (NURF) or in a corrected data base as established by the EPA Administrator pursuant to paragraph (3). For nonutility units, the baseline is the NAPAP Emissions Inventory, Version 2. The Administrator, in the Administrator's sole discretion, may exclude periods during which a unit is shutdown for a continuous period of four calendar months or longer, and make appropriate adjustments under this paragraph. Under petition of the owner or operator of any unit, the Administrator may make appropriate baseline adjustments for accidents that caused prolonged outages.

b) For any other nonutility unit that is not included in the NAPAP Emissions Inventory, Version 2, or a corrected data base as established by the Administrator pursuant to paragraph (3), the baseline shall be the annual average quantity, in mmBtu consumed in fuel by that unit, as calculated pursuant to a method which the Administrator shall prescribe by regulation to be promulgated not later than eighteen months after enactment of the CAA Amendments of 1990.

c) The Administrator shall, upon application or on his own motion, by December 31, 1991, supplement data needed in support of this subchapter and correct any factual errors in data from which affected Phase II units' baselines or actual 1985 emission rates have been calculated. Corrected data shall be used for purposes of issuing allowances under the subchapter. Such corrections shall not be subject to judicial review, nor shall the failure of the Administrator to correct an alleged factual error in such reports be subject to judicial review.

#### **baseline audiogram**

The audiogram against which all future audiograms are compared. *See also [audiogram](#).*

#### **baseline concentration**

Under the Clean Air Act of 1990: With respect to a pollutant, the ambient concentration levels which exist at the time of the first application for a permit in an area subject to the CAA, based on air quality data available in the EPA or a state air pollution control agency on such monitoring data as the permit applicant is required to submit. Such ambient concentration levels shall take into account all projected emissions in, or which may affect, such area from any major emitting facility on which construction commenced prior to January 6, 1975, but which has not begun operation by the date of the baseline air quality concentration determination. Emissions of sulfur oxides and particulate matter from any major emitting facility on which construction commenced after January 6, 1975, shall not be included in the baseline and shall be counted against the maximum allowable increases in pollutant concentrations established under the CAA.

#### **baseline data**

Data that describe the magnitude and range of exposures for a homogeneous exposure group and stressor (e.g., an airborne contaminant, physical agent, etc.).

#### **basic division of accomplishment**

*See [therblig](#).*

#### **basic division of work**

*See [therblig](#).*

#### **basic element**

*See [therblig](#).*

#### **basic elements of performance**

A quantitative technique for measuring the residual capabilities of disabled individuals.

#### **basic event**

As pertains to fault tree analysis (FTA) and/or the management oversight and risk tree (MORT), a root fault event, or the first in the process to have occurred that requires no further development or analysis. Represented graphically as a circle.

#### **basic grant**

The funds available to a state for carrying out an approved State Enforcement Plan (SEP),

which include, but are not limited to: 1) recruiting and training of personnel, payment of salaries and fringe benefits, the acquisition and maintenance of equipment except those at fixed weigh scales for the purposes of weight enforcement, and reasonable overhead costs needed to operate the program; 2) commencement and conduct of expanded systems of enforcement; 3) establishment of an effective out-of-service and compliance enforcement system; and 4) retraining and replacing staff and equipment.

**basic input output system (BIOS)**

A process that allows one computer to "speak the same language" as every other computer.

**basic measurement cycle**

Any of four basic scales used for classifying data in statistical analyses. *See also nominal scale, ordinal scale, equal-interval scale, and ratio scale.*

**basic motion**

Any fundamental, complete motion using the primary physiological and/or biomechanical performance capabilities of the body or its member parts, as determined by motion analysis studies. *See therblig.*

**Basic Motion Time Study (BMST)**

A predetermined motion time system.

**basic research**

That fundamental research performed to acquire scientific knowledge, without concern for immediate practical application. Also referred to as *pure research.*

**basic sciences**

Those disciplines involving the study of mathematics, chemistry, physics, biology, and psychology.

**Basic T**

A reference to the arrangement of four basic flight instruments in a standard pattern, with the airspeed and attitude indicators and altimeter in a horizontal line across the top, and the heading indicator centered below.

**basic time**

That time allowed or required for performing a work element at a standard rate. Represented in the formula:

$$BT = \frac{\text{observed time} \times \text{observed rating}}{\text{standard rating}}$$

**basic units**

There are seven basic or fundamental units of measure in use throughout the world. The most widely recognized set of these units, known as the *International System of Units (SI)*, was initially adopted in 1960 and is reviewed and amended, as required, at one of the General Conferences on Weights and Measures, an international meeting that convenes periodically. In addition, there are two common "metric" systems, often referred to as the *MKS System* (meters, kilometers, and seconds) and the *CGS System* (centimeters, grams, and seconds). Also, there is the *English System* (obsolete almost every on earth except for the United States).

**basic utility stage I airport**

This type of airport serves 75 percent of the single-engine and small twin-engine airplanes used for personal and business purposes. Precision approach operations are not usually anticipated. This airport is designed for small airplanes in Airport Reference Code B-I.

**basic utility stage II airport**

This type of airport serves all the airplanes of stage I plus some small business and air taxi-type twin-engine airplanes. Precision approach operations are not usually anticipated. This airport is also designed for small airplanes in Aircraft Reference Code B-I.

**basicity factor**

Factor used to determine neutralization capabilities of alkaline reagents used to treat acidic wastes.

**basilar membrane**

That membrane in the cochlea to which the organ of Corti is attached.

**basin**

(1) When speaking of a large river, ordinarily means or includes the entire area drained by the main stream and its tributaries. (2) Any bowl-shaped depression in the surface of the land or ocean floor. *See also inundation area.*

**basin and range**

An area of the southwestern United States characterized by roughly parallel mountain ranges and valleys, formed by a series of tilted fault blocks, and brought about by

tectonic extension of the region. As is true of any region experiencing crustal extension, normal faulting is common here. This name can apply generally to any zone of similar landforms and tectonics.

**basket centrifuge**

Batch-type centrifuge where sludge is introduced into a vertically mounted spinning basket and separation occurs as centrifugal force drives the solids to the wall of the basket.

**basket guard**

See *cage*.

**bass**

Those sound frequencies in the lower portion of the audio range, generally below about 250 Hz.

**bastard tow**

A tow made up of uneven or dissimilar barges.

**BAT**

See *best available technology*.

**batch process**

A non-continuous treatment process in which a discrete quantity or batch of liquid is treated or produced at one time.

**batch reactor**

A reactor where the contents are completely mixed and flow neither enters nor leaves the reactor vessel.

**batching**

The process of scheduling work in small increments. Synonymous with *short-interval scheduling*.

**BATEA**

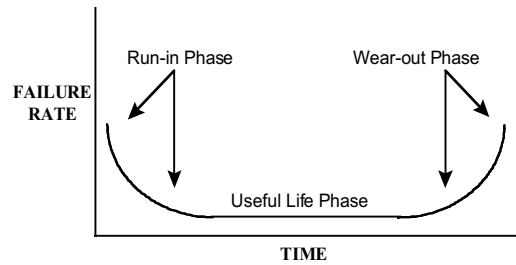
Acronym for best available technology economically available.

**bathophobia**

Morbid dread of depths or looking down from high places, with fear of falling.

**bathtub curve**

A graphic representation of the life cycle of products, systems, or individual components in terms of frequency of failures relative to periods of usefulness. In system safety, it is also known as a *reliability curve*. See also *life cycle characteristic curve*.



*Typical bathtub curve*

**bathycardia**

A condition in which the heart is positioned abnormally low in the thorax.

**batt**

A section of insulating material.

**battery**

(1) *General*. Any unit, apparatus, or grouping in which a series or set of parts or components is assembled to serve a common end. (2) *Law*. Intentional and wrongful physical contact with a person without his or her consent that entails some injury or offensive touching. (3) *Electrical*. One or more cells operating together as a single source of direct current. (4) *Military*. An artillery unit equivalent to an infantry company; a group of guns, rockets, or related equipment forming an artillery unit.

**battery life**

With instrumentation, the time period over which the battery of an instrument will provide sufficient power for uninterrupted operation of the device.

**battery limit**

The boundary limits of equipment, or a process unit that defines interconnecting points for electrical piping or wiring.

**battle of the forms**

In commercial law, term used to describe the effect of a multitude of forms used by buyers and sellers to accept and to confirm terms expressed in other forms.

**batture**

A marine term, used to denote a bottom of sand, stone, or rock, mixed together, and rising towards the surface of the water; as a technical word and also in common parlance, an elevation of the bed of a river, under the surface of the water. The term is, however, sometimes used to denote the same elevation of the bank, when it has risen above the sur-

face of the water, or is as high as the land on the outside of the bank.

**baud**

A unit of serial transmission speed, usually equivalent to bits per second. If each signal event is represented by one bit, baud is equivalent to bits per second.

**bauxite**

Ore containing alumina monohydrate or alumina trihydrate, which is the principal raw material for alumina production.

**bauxite fume pneumoconiosis**

A pulmonary fibrosis due to the inhalation of aluminum ore or processing dust fumes. Also referred to as *Shaver's disease*.

**bay/inlet**

A water area that is an opening of the sea/ocean into the land, or of an estuary, lake, or river into its shore.

**baygall**

A low-lying wet land matter with vegetable fibers and often with gallberry and other thick-growing bushes.

**Bayle's disease**

Progressive general paralysis.

**Bazin's disease**

Tuberculosis indurativa, chronic tuberculosis of the skin, characterized by indurated nodules.

**bbl**

See *barrel*.

**BBL**

Burst before leak.

**bcf**

Billion cubic feet.

**BCF**

See *bioconcentration factor*.

**BCS**

See *border cargo selectivity*.

**BCSP**

See *Board of Certified Safety Professionals*.

**BDAT**

See *best demonstrated available technology*.

**BDOC**

See *biodegradable dissolved organic carbon*.

**beachwell**

A shallow intake well making use of beach sand and structure as a filter medium.

**beacon**

A fixed signal, mark, or light and associated facilities erected for the guidance of mariners or airplane pilots.

**beam**

(1) *Illumination*. A concentrated emission of light energy along a definite projection in a single direction. (2) *Material Handling*. The horizontal support member of a lifting mechanism. (3) *Longshoring*. A portable transverse or longitudinal beam which is placed across a hatchway and acts as a bearer to support the hatch covers. Also referred to as *strongback*. (4) *Boating*. The width of a ship.

**beam angle**

A measure of light beam spread; the angle between diametrically opposed edges of a projected light beam at which the luminous intensity is some stated percentage of the maximum along the beam axis, with all measures taken in a wavefront equidistant from the source. See also *beam axis*.

**beam axis**

(1) An imaginary straight line representing the direction along which a light beam is projected. (2) A line from the source through the centers of the x-ray fields.

**beam element**

A modeling structure which is capable of bending, torsion, and axial stiffness.

**beam spread**

The lateral distribution of a projected light beam from the beam axis. See also *beam axis*.

**bean hauler**

A driver who transports fruits and vegetables.

**bear trap**

A section of movable dam with concrete piers in either side (generally about 100 feet wide) and provided with a gate which may be raised or lowered by compressed air. The bear trap serves as a type of safety valve. When the pool level maintained at the dam becomes too high, the bear trap is lowered to permit the excess water to run out. This pool control feature of movable wicket-type dams is found on the Ohio and Illinois rivers. The bear trap will always be located on the opposite side of the river from the lock and is very dangerous to approach when open.

**bearer**

In scaffolding construction, a horizontal member of a scaffold upon which the platform rests and which may be supported by ledgers.

**bearing**

*Navigation.* The horizontal direction to or from any point, usually measured clockwise from true north, magnetic north, or some other reference point, through 360 degrees. *See also* [course](#) and [flight path](#).

**beat**

A periodic variation in the intensity of sound generated from the combination of two simple tones of slightly different frequencies having approximately the same orders of magnitude.

**beat elbow**

Bursitis of the elbow joint that can result from the use of heavy vibrating tools.

**beat frequency**

The number of occasions per unit time at which a beat occurs.

**beat knee**

A bursitis in the knee joint due to prolonged vibration, pressure, or repeated friction.

**Beaufort scale**

A numerical scale of wind force on which a Beaufort force 0 wind is calm and a force 12 wind indicates hurricane force with winds in excess of 120 km/hr (75 mph).

**becquerel**

A unit expressing the rate of radioactive disintegration. One becquerel is equal to one radioactive disintegration per second. There are  $3.7 \times 10^{10}$  becquerels per curie of radioactivity, (Bq).

**bed depth**

The depth of filter media or ion exchange resin contained in a vessel.

**bed-load movement**

Solids which are transported along the riverbed as a semi-suspended sediment.

**bed rest**

The maintaining of an individual in bed, either for therapy or experimental purposes.

**Bedaux plan**

A wage incentive plan in which performance above the rated standard 60 B units per hour would result in merit bonuses.

**bedbug**

A bug of the genus *Cimex*. A flattened, oval, reddish insect that inhabits houses, furniture, and neglected beds, and feeds on man, usually at night.

**bedrock**

Solid rock encountered below the mantle of loose rock and soil on the earth's surface.

**Beer-Lambert law**

Holds that the absorptive characteristics of a substance is a constant with respect to changes in concentration.

**beggiatoa**

Filamentous microbe, commonly associated with sludge bulking, that results from low dissolved oxygen levels and/or high sulfide levels.

**beginning milestone**

The continuous milestone notation to the nearest 0.01 mile that marks the beginning of any road or trail segment.

**beginning spurt**

A briefly higher than normal level of activity at the beginning of the work period or by an employee new to the job.

**behavior**

Any and all responses of an individual, group, or system.

**behavior-anchored rating scale (BARS)**

Any rating scale developed to evaluate individual behavior patterns.

**behavioral competence**

Having the ability to integrate those psychosocial and sensorimotor patterns required to complete one or more specified tasks.

**behavioral dynamics**

The behavioral operating characteristics of individuals and groups as they are conditioned by the external working environment and/or individual and group interactions.

**behavioral resistance**

An opposition to carrying out an order, directive, or someone's expressed desire.

**behavioral rigidity**

An inability to effectively deal with new situations.

**behavioral toxicology**

The study and assessment of neural impairment due to toxic chemical exposure through the use of psychological methods.



**behaviorism**

A theory of psychology based upon a purely objective observation and analysis of human and animal behavior without reference to the complexities and nuances of psychoanalytic depth psychology.

**Behring's law**

Blood and serum of an immunized person, when transformed to another subject, will render the latter immune.

**BEI**

See *biological exposure index*.

**BEIR Committee**

Biological Effects of Radiation Committee of the National Academy of Sciences. Reports on the health effects of ionizing radiation.

**Békésy audiometry**

An auditory threshold determination procedure involving observer control in which an individual alternately, over several cycles, presses a switch to reduce signal level when the sound is heard and releases it when the sound becomes inaudible. Also referred to as *Békésy tracking procedure*.

**Békésy tracking procedure**

See *Békésy audiometry*.

**bel (B)**

A non-dimensional measure of the intensity of some energy, corresponding to the ratio of two intensity or power levels. See also *decibel*.

**Belding-Hatch heat stress index**

An estimate for body heat stress based on the ratio of actual evaporative heat loss to the maximum possible evaporative heat loss for the given environment, which may be determined by temperature, humidity, air velocity, workload, clothing, and their interactions. Commonly referred to simply as *heat stress index*.

**belief-action distinction**

The distinction noted in analysis of cases under the First Amendment, U.S. Constitution (freedom of speech and religion) to the effect that one is guaranteed the right to any belief he/she chooses, but when that belief is translated into action, the state also has rights under its police power to protect others from such actions.

**Bell's palsy**

Neuropathy of the facial nerve, resulting in paralysis of the muscles of the face, usually on one side. Victims usually are unable to close their mouths, so that they drool and cannot whistle. If they are unable to close the eye on the affected side, it may become tearful and inflamed. Facial palsy is often no more than a temporary condition lasting a few days or weeks. Occasionally, the paralysis results from a tumor pressing on the nerve, or from physical trauma to the nerve. More often, however, the cause is unknown. In many cases, the deformity may be reduced by plastic surgery.

**belly**

(1) The fleshy central portion of a muscle along its longitudinal axis. (2) Slang term for the stomach-abdominal region of the frontal portion of the torso.

**belly button rule**

A task design guideline stating that the hands should remain close to the abdominal region when lifting or handling items.

**below knee (BK)**

Pertaining to a prosthesis for or an amputee/amputation for which some part of the lower leg, and all of the ankle and foot, are missing/taken.

**below minimums**

Weather conditions below the minimums prescribed by regulation for the particular action involved (e.g., landing minimums, takeoff minimums).

**belt conveyor**

A device used to transport material, consisting of an endless belt that revolves around head and tail pulleys.

**belt filter press**

See *belt press*.

**belt press**

A sludge dehydration device utilizing two fabric belts revolving over a series of rollers to squeeze water from the sludge. May be referred to as a *belt filter press*.

**belt thickener**

Mechanical sludge processing device that uses a revolving horizontal filter belt to pre-thicken sludge prior to dehydration and/or disposal.



**Benadryl**

Trademark for diphenhydramine, an antihistamine. See also *antihistamine*.

**bench**

A seat of judgment or tribunal for the administration of justice. The seat occupied by judges in courts. Also, the court itself, or the aggregate of the judges composing a court itself, as in the phrase "before the full bench." See also *bar*.

**bench conference**

A meeting at the judge's bench prior to, during, or after a trial, or hearing between counsel and the judge to discuss a matter pertaining to such proceeding. Commonly called to discuss questions of evidence out of hearing of jury; it may or may not be made part of the written record of the proceeding.

**bench test**

A small-scale test or study used to determine whether a technology is suitable for a particular application.

**bench warrant**

Process issued by the court itself, or "from the bench," for the attachment or arrest of a person in case of contempt, or where an indictment has been found, or to bring a witness who fails to obey a subpoena.

**benchmark**

A thoroughly documented reference value or standard or measurement against which performance, response, or other characteristics may be compared with confidence.

**benchmark job**

A job or task having enough common characteristics with one or more other jobs such that it may be used as a predictor for those jobs in such aspects as evaluations of worker output and time standards.

**bend**

Curve in the river, analogous to a curve in a highway.

**bends**

A form of decompression sickness in which pain occurs in joints, muscles, and/or bones. The condition results from a too rapid decrease in atmospheric pressure (as with deep sea divers). The term is derived from the bodily contortions its victims undergo when atmospheric pressure is abruptly changed

from a high pressure to a relatively lower pressure. A form of altitude sickness suffered by aviators who ascend too rapidly to high altitudes is similar to the bends. Bends may also be a complication in a type of oxygen therapy called *hyperbaric oxygenation* in which the person is placed in a high-pressure chamber to increase the oxygen content of the blood. The phenomenon of bends is explained in terms of a law of physics: The greater the atmospheric pressure, the greater the amount of gas that can be dissolved in a liquid. The gas involved in bends is the air we breathe, composed chiefly of nitrogen and oxygen. Under normal atmospheric pressure (about 15 lb. per square inch), nitrogen is present in the blood in dissolved form. If the atmospheric pressure is substantially increased, a proportionately greater amount of nitrogen will be dissolved in the blood. The same is true of oxygen, and this is the basis for hyperbaric oxygenation in the treatment of oxygen deficiency. The increase in pressure causes no ill effects. Nor will there be any ill effects if the pressure is gradually brought back to normal. When the decrease in pressure is slow, the nitrogen escapes safely from the blood as it passes through the lungs to be exhaled. If the pressure drops abruptly back to normal, the nitrogen is suddenly released from its state of solution in the blood and forms bubbles. Although the body is now under normal air pressure, expanding bubbles of nitrogen are present in the circulation and force their way into the capillaries, blocking the normal passage of the blood. This blockage (or *embolism*) starves cells dependent on a constant supply of oxygen and other blood nutrients. Some of these cells may be nerve cells located in the limbs or in the spinal cord. When they are deprived of blood, an attack of the bends occurs. The oxygen in the blood reacts similarly when abnormal pressure is abruptly relieved. But because oxygen is dissolved more easily than nitrogen, and because some of the oxygen combines chemically with hemoglobin, the oxygen released in decompression forms fewer bubbles, and is therefore less troublesome.

**beneficial impact**

A purposeful impact, as in performing some task. Also referred to as *functional impact*.

**beneficial organism**

A pollinating insect, pest predator, parasite, pathogen, or other biological control agent that functions naturally or as part of an integrated pest management program to control another pest.

**benefit**

Advantage; profit; fruit; privilege; gain; interest. The receiving, as the exchange for promise, some performance or forbearance which the promisor was not previously entitled to receive.

**benefit-of-the bargain damages**

The difference between the value received and the value of the fraudulent party's performance as represented.

**benign**

Pertaining to the mild character of an illness or the non-malignant character of a neoplasm.

**bent**

Deformed in a shape deviation from the original line or plane; creased, kinked, or folded.

**bent torso breadth**

The horizontal linear distance across the shoulders with the individual in the bent torso position. *See also bent torso position.*

**bent torso height**

The vertical linear distance from the floor or other reference surface to the highest point on the head in the bent torso position. *See also bent torso position.*

**bent torso position**

A posture with the individual standing with feet separated by 18 inches, leaning forward with hands on knees, and looking straight ahead.

**benthic oxygen demand**

The oxygen demand exerted by the organic mud and sludge deposits on the bottom of a river or stream.

**benthic**

Relating to the bottom environment of a water body.

**benthic organism**

Benthos. A form of aquatic plant or animal life that is found on or near the bottom of a stream, lake, or ocean.

**benthic region**

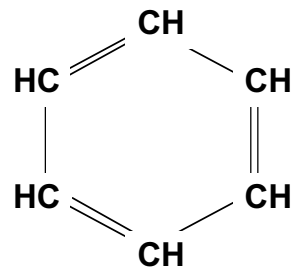
The bottom layer of a body of water.

**bentonite**

Colloidal clay-like mineral that can be used as a coagulant aid in water treatment systems. Also used as a landfill liner because of its limited permeability.

**benzene**

An aromatic hydrocarbon used as a solvent; it has carcinogenic properties and is often characterized by its ring structure. Chemical formula is  $C_6H_6$ , represented by the structure:

**beriberi**

A disease caused by vitamin B (thiamin) deficiency common among populations that survive on polished rice. It is characterized by loss of muscle power, emaciation, and exhaustion.

**berm**

A horizontal, earthen ridge or bank. The sharp definitive edge of a dredged channel such as in a rock cut.

**Bermuda high**

*See subtropical high.*

**Bernoulli's equation**

Energy equation commonly used to calculate head pressure; it considers velocity head, static head, and elevation.

**berth**

A specific segment of wharfage where a ship ties up alongside at a pier, quay, wharf, or other structure that provides a breasting surface for the vessel. Typically, this structure is a stationary extension of an improved shore and intended to facilitate the transfer of cargo or passengers. *See also wharfage.*

**beryl**

A silicate of beryllium and aluminum that is considered a carcinogen.

**berylliosis**

Chronic poisoning caused by exposure to the dust or fume of beryllium metal, beryllium oxide, or soluble beryllium compounds.

Symptoms include a loss of appetite and weight, weakness, cough, extreme difficulty in breathing, cyanosis, and cardiac failure. The disease may appear 5-20 years after exposure has ceased. It is commonly progressive in severity, will cause fibrous growth in the lungs, can create kidney stones, and can be accompanied by enlargement of the heart, liver, and spleen.

### **beryllium**

(1) A chemical element, atomic number 4, atomic weight 9.012, symbol Be. (2) An airborne metal that can be hazardous to human health when inhaled. It is discharged by machine shops, ceramic and propellant plants, and foundries.

### **best available control technology (BACT)**

An emission limitation based on the maximum degree of emission reduction (considering energy, environmental, and economic impacts and other costs) achievable through application of production processes and available methods, systems, and techniques. In no event does BACT permit emissions in excess of those allowed under any applicable Clean Air Act provisions. Use of the BACT concept is allowable on a case by case basis for major new or modified emissions sources in Attainment Areas and applies to each regulated pollutant.

### **best available technology (BAT)**

The best technology, treatment techniques, or other means available after considering field, rather than solely laboratory, conditions.

### **best demonstrated available technology (BDAT)**

A technology demonstrated in full-scale commercial operation to have statistically better performance than other technologies.

### **best evidence rule**

Rule which requires that the best evidence available be presented in lieu of less satisfactory evidence.

### **best management practice (BMP)**

The schedules of activities, methods, measures, and other management practices to prevent pollution of waters and facilitate compliance with applicable regulations.

### **beta**

(1) The probability of making a Type II error. Represented by the symbol  $\beta$ . (2). A measure

of a system's response bias in signal detection theory, represented by the ratio at the criterion level of the height of the signal + noise distribution to the height of the noise distribution alone.

### **beta coefficient**

The weighting factor preceding a variable in a regression equation.

### **beta decay**

Radioactive change by emission of a beta particle. In beta decay, a neutron decays into a proton, with the emission of an *electron* (or beta particle); or, a proton transforms into a neutron and emits a *positron*. In both cases, the charge of the nucleus is changed without changing the number of nucleons.

### **beta particle**

A small particle ejected spontaneously from the nucleus of a radioactive element. It has the mass of the electron, has a charge of either -1 or +1, and has a mass of 1/1840 that of a proton or neutron. It has low penetrating power and short range. The most energetic of beta particles can penetrate the skin (causing a skin burn effect) and other tissues.

### **beta radiation**

See *beta particle*.

### **beta ray**

A stream of beta particles of nuclear origin more penetrating but less ionizing than alpha rays per unit length of travel; a stream of beta particles emitted in certain radioactive disintegrations.

### **beta ray irradiation**

A process to reduce pathogens in solid waste by irradiating sludge with beta rays from an accelerator at dosages of a least 1.0 megarad at room temperature.

### **beta rhythm**

An EEG frequency band consisting of frequencies greater than 13 Hz.

### **beta testing**

The second release phase of software evaluation, just prior to release in the commercial market. See also *alpha testing*.

### **Betadine**

Trademark for preparations of providone-iodine, which have a longer antiseptic action than most iodine solutions.

**betatron**

A circular electron accelerator providing a pulsed beam of high-energy electrons or x-rays by magnetic induction.

**BeV**

Billion electron volts, 1 E+9 eV.

**BEV**

See *barrier equivalent velocity*.

**beverage semitrailer**

A van-type, drop-frame semitrailer designed and used specifically for the transport and delivery of bottled or canned beverages that has side-only access for loading and unloading this commodity.

**beyond a reasonable doubt**

In evidence, means fully satisfied, entirely convinced, satisfied to a moral certainty; the phrase is the equivalent of the words clear, precise, and indubitable.

**beyond compliance**

A regulatory trend becoming increasingly more prevalent as a voluntary alternative to existing statutes. Companies performing in this mode would perform beyond what is expected by existing laws or regulations, established performance limitations and technical requirements. The trend may promote increased operational flexibility and more open community reporting, and is used in many EPA incentive programs for industry.

**bezel**

A rim for holding a piece of transparent glass or plastic for a display on a meter or other indicator.

**Bezold spreading effect**

See *color assimilation*. Also known as *assimilation* and *similitude effects*.

**Bezold-Brücke effect**

See *Bezold-Brücke phenomenon*.

**Bezold-Brücke hue shift**

See *Bezold-Brücke phenomenon*.

**Bezold-Brücke phenomenon**

A change in the apparent color of a visual stimulus with a change in stimulus intensity or illumination. Also referred to as *Bezold-Brücke effect* and *Bezold-Brücke hue shift*.

**BGT**

Black globe temperature. See also *black globe thermometer*.

**bhp**

See *brake horsepower*.

**bi-**

A prefix denoting a relationship to two symmetrical or approximately symmetrical parts.

**BIA**

See *bioelectrical impedance analysis*.

**biacromial breadth**

The horizontal distance across the shoulders from right to left acromion. Measured with the individual standing erect, and the shoulders straight. Also referred to as *shoulder breadth*.

**bias**

(1) An individual preference or prejudice on an issue. (2) A systematic error represented by the difference between the mean of repeated measurements and the true value; a tendency to over- or underestimate the true/actual value. (3) A relatively constant voltage offset from zero.

**biauricular breadth**

The horizontal linear distance from the most lateral point of the right ear to the same point of the left ear. Measured without auricular compression.

**bicanthic diameter**

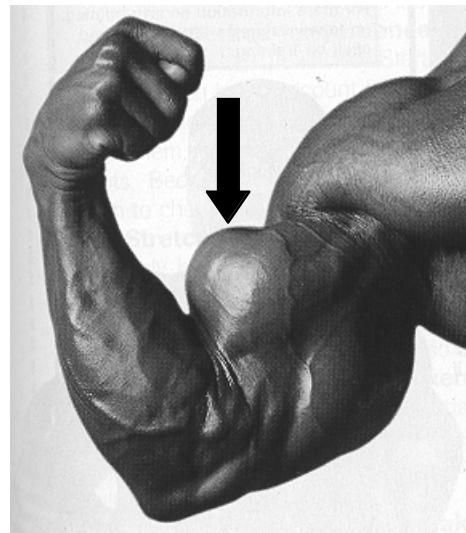
See *ectocanthic breadth*.

**bicarbonate**

Any chemical compound containing a  $\text{HCO}_3$  group.

**bicarbonate alkalinity**

Alkalinity caused by bicarbonate ions.



The arrow indicates the position of the biceps brachii

**biceps brachii**

The large, two-headed muscle in the anterior upper arm.

**biceps circumference, flexed**

The maximum surface distance around the biceps brachii. Measured with both the shoulder and elbow flexed 90 degrees, such that the upper arm is horizontal, and the hand clenched into a fist.

**biceps circumference, relaxed**

The maximum surface around the upper arm at the level of the biceps brachii belly. Measured with the arm hanging relaxed at the individual's side.

**biceps femoris**

A large, two-headed muscle in the posterior thigh; one of the hamstring muscles.

**biceps muscle**

See *biceps brachii*, and *biceps femoris*.

**biceps skin fold**

The thickness of a vertical skin fold on the anterior midline of the upper arm over the belly of the biceps brachii muscle at the level of the upper arm circumference measure. Measured with the individual standing erect and the arms hanging naturally at the sides.

**bicipital**

Pertaining to a muscle having two heads, often specifically to the biceps brachii and biceps femoris muscles.

**bicristale breadth**

See *biiliocristale breadth*.

**bicycle**

A vehicle having two tandem wheels, propelled solely by human power, upon which any person or persons may ride.

**bicycle ergometer**

A stationary cycle (typically with only one wheel) used to measure or work against a fixed or adjustable force.

**bicycle lane**

A portion of a roadway which has been designated by striping, signing and pavement markings for the preferential or exclusive use of bicyclists. Also referred to as *bike lane*.

**bicycle path**

A bikeway physically separated from motorized vehicular traffic by an open space or barrier and either within the highway right-of-

way or within an independent right-of-way. Also referred to as *bike path*.

**bicycle route**

A segment of a system of bikeways designated by the jurisdiction having authority with appropriate directional and information markers, with or without a specific bicycle route number. Also referred to as *bike route*.

**bicycles**

Includes bicycles of all speeds and sizes that do not have a motor.

**bideltoid breadth**

The horizontal linear distance across the maximum lateral protrusions of the right and left deltoid muscles. Measured with the individual standing erect with the arms hanging naturally at the sides. See also *biachromial breadth*.

**biflow filter**

Granular media filter characterized by water flow from both top and bottom to a collector located in the center of the filter bed.

**bifocals**

A pair of lenses in glasses having two correction portions, one for distance vision, the other for near vision.

**big hat**

(*slang*). State Trooper.

**big rigger**

*Trucking (slang)*. An arrogant driver, or one who will drive only long trailers.

**bight of a bend**

Deepest portion of a bend (not in depth of water); sharpest part of a curve.

**bigonial breadth**

The horizontal linear distance across the gonial angles of the jaw. Measured with the jaw muscles relaxed and the individual sitting or standing erect.

**biiliac breadth**

See *biiliocristale breadth*.

**biiliocristale breadth**

The horizontal linear distance across the torso measured between the superior points of the iliac crests. Measured with the individual standing erect, with weight equally balanced on both feet. Also known as *biiliac breadth*, *transverse pelvic breadth*, *pelvic breadth*, and *bicristale breadth*.



**bike lane**

See *bicycle lane*.

**bike path**

See *bicycle path*.

**bike route**

See *bicycle route*.

**bikeway**

Any road, path, or way which in some manner is specifically designated as being open to bicycle travel, regardless of whether such facilities are designated for the exclusive use of bicycles or are to be shared with other transportation modes.

**bilabial height**

The vertical linear distance between the most superior point on the upper lip and the most inferior point on the lower lip.

**bilateral**

Pertaining to similar structures present on both sides of a symmetric or approximately symmetric body.

**bilateral contract**

A term, used originally in civil law but now generally adopted, denoting a contract in which both the contracting parties are bound to fulfill obligations reciprocally toward each other; as a contract of sale where one becomes bound to deliver the thing sold, and the other to pay the price of it.

**bilateral teleoperator**

A teleoperator system in which force and motion can be transmitted in both directions (from the operator to teleoperator and vice versa).

**bilateral trade agreement**

Commerce between two countries based on a reciprocal trade agreement which specifies the quantity of goods to be traded, the time limit of the agreement, and that the balances due be remitted directly between the countries.

**bile**

The yellowish-brown or green fluid secreted by the liver and discharged into the small intestine where it aids in the emulsification of fats, increases peristalsis, and retards putrefaction.

**bilharzia**

Waterborne disease also known as schistosomiasis. See *schistosomiasis*.

**bilharziasis**

See *schistosomiasis*.

**bilingual**

Capable of speaking, writing, and understanding two languages.

**bilirubin**

An orange bile pigment produced by the breakdown of hemoglobin and excreted by the liver cells. Failure of the liver cells to excrete bile, or obstruction of the bile ducts, can cause an increased amount of bilirubin in the body fluids and thus lead to obstructive jaundice. Normally, the body produces a total of approximately 260 mg of bilirubin per day. Almost 99% is excreted in the feces; the remaining 1% is excreted in the urine (as urobilinogen). A test for bilirubin in the blood is called the *van den Bergh test*. Normal range for this test is 0.0 to 0.1 mg/100 mL of serum for direct bilirubin, and 0.2 to 1.4 mg/100 mL of serum for total bilirubin.

**Bill of Lading**

A document that establishes the terms of a contract between a shipper and a transportation company. It serves as a document of title, a contract of carriage, and a receipt for goods.

**Bill of Rights**

The first ten Amendments to the U.S. Constitution providing for individual rights, freedoms, and protections.

**billing**

A transaction conducted by a carrier involving the determination of the proper rate and total charges for a shipment and the issuance of a freight bill.

**billow clouds**

Broad, nearly parallel lines of clouds oriented at right angles to the wind.

**bimalleolar breadth**

The horizontal linear distance across the protrusions of the medial and lateral ankle bones. Measured with the individual standing erect and the body weight distributed evenly on both feet. Also referred to as *ankle breadth*.

**bimanual**

Performed with both hands.

**bimetallic thermometer**

A thermometer which consists of two different metal strips that are brazed together and



the differences of expansion of the metal strips, due to a temperature change, are used to provide an indication of temperature.

**bimodal**

(1) Pertaining to or affecting two sensory modalities simultaneously. (2) A statistical distribution having two modal values.

**binary digit**

See *bit*.

**binary fission**

Asexual reproduction in some microbes where the parent organism splits into two independent organisms.

**binaural**

Having input to both ears simultaneously.

**binaural hearing**

The perception of sound by both ears.

**bind**

To obligate; to bring or place under definite duties or legal obligations, particularly by a bond or covenant. To affect one in a constraining or compulsory manner with a contract or a judgment.

**binders**

Brakes.

**binding**

Restricted in movement or a tightening or sticking condition resulting from high or low temperatures, foreign materials in the mechanism, surface friction, etc.

**binding agreement**

A contract which is enforceable such as an offer to buy or sell when a person to whom it is made accepts it and communicates his/her acceptance.

**binding energy**

The energy represented by the difference in mass between the sum of the component parts of a nucleus and the actual mass of the nucleus. It is the energy that holds the neutrons and protons together and, subsequently, it is the amount of energy required to separate the individual nucleons.

**binocular**

Pertaining to the use of or input to both eyes simultaneously.

**binocular accommodation**

The process of both eyes accommodating simultaneously.

**binocular disparity**

The difference in visual images on the right and left retinas resulting from the lateral separation of the eyes. May also be referred to as *lateral retinal image disparity* or *binocular parallax*.

**binocular fusion**

The merging of images from the two eyes into a single perception. May sometimes be referred to more simply as *fusion*.

**binocular parallax**

See *binocular disparity*.

**binocular portion of the visual field**

See *binocular visual field*.

**binocular rivalry**

A phenomenon in which an alternation of partial or entire images is perceived when the two eyes are stimulated simultaneously with different images. Also known as *retinal rivalry*.

**binocular suppression**

A loss of all or some portion of one eye's visual field resulting from conflicting information being presented to the fusion region of the outer eye's visual field.

**binocular vision**

The quality of vision existing by virtue of having two eyes in which the visual fields of the two eyes overlap. More technically referred to as *stereopsis*.

**binocular visual field**

The portion of the visual field where the monocular visual fields of the two eyes overlap. See also *monocular visual field*.

**binomial distribution**

A distribution of data or results describing probabilities of the outcome of trials that can have one or two mutually exclusive results (e.g., exposure above or below a PEL). This theoretical discrete probability distribution for a binomial random variable is represented as:

$$P = n/r \ p^n (1 - p)^{n-r}$$

where:

*n* = total number of outcomes

*r* = number of successful outcomes

$(n/r)$  = number of combinations of  $n$  outcomes, taken  $r$  at a time.

Used to approximate the normal distribution for large sample sizes.

**bio-**

Prefix. Pertaining to living systems or those components which may be or have been a part of a living system.

**bioaccumulative**

Substances that increase in concentration in living organisms (that are very slowly metabolized or excreted) as they breathe contaminated air, drink contaminated water, or eat contaminated food.

**bioacoustic**

Pertaining to the effect of sound on the body.

**bioacoustics**

The study or use of the relationships between sound and living organisms.

**bioaerosol**

Any aerosol consisting primarily of biological entities such as microbes; the presence of biological entities in aerosol form.

**bioassay**

Use of living organisms to measure the effect of a substance, factor, or condition by comparing pre- and post-exposure data.

**bioastronautics**

The study of medicine, biology, and physiology of one or more substances.

**bioavailability**

The amount of a chemical that becomes available to the target organ/tissue after the material has entered the body.

**biobrick**

A building brick made of kiln-dried municipal wastewater sludge.

**biochemical**

Describes the event or action involving chemistry of living organisms and the chemical changes occurring therein.

**biochemical oxidation**

Oxidative reactions caused by biological activity which result in chemical combination of oxygen with organic matter. *See also* **biological oxidation**.

**biochemical oxygen demand**

*See* **biological oxygen demand (BOD)**.

**biochemistry**

The study of chemical reactions occurring in living organisms.

**biocidal**

Causing the death of living organisms.

**biocide**

A chemical used to inhibit or control the population of troublesome microbes.

**bioclimatology**

Scientific study of effects on living organisms of conditions of natural environment (rainfall, daylight, temperature, etc.) prevailing in specific regions of the earth.

**bioconcentration**

The net increase in concentration of a chemical and its metabolites in an organism relative to the concentration of the chemical of concern in the ambient water or air.

**bioconcentration factor (BCF)**

The accumulation of chemicals that live in contaminated environments equal to the quotient of the concentration of a substance in aquatic organisms divided by the concentration in the water during the same time period.

**biocontactor**

A unit process such as an aeration basin, trickling filter, rotating biological contactor, or digester where microbes degrade/transform organic matter.

**biocontainment**

Any technique used to achieve bioisolation of one or more substances.

**bioconversion**

The conversion of organic waste products into an energy resource through the action of microbes.

**biocular breadth**

*See* **ectocanthic breadth**.

**biocycle**

The sequence of certain rhythmically repeated phenomena observed in living organisms.

**biodegradable**

The ability to break down or decompose rapidly under natural conditions and processes.

**biodegradable dissolved organic carbon (BDOC)**

The portion of total organic carbon that is easily degraded by microbes.

**biodegradable material**

Organic waste material that can be broken down into basic elements by the action of microorganisms.

**biodegradation**

Chemical reaction of a substance induced by enzymatic activity of microorganisms.

**biodiversity**

An environment where multiple organisms coexist.

**biodynamicist**

One who works in the field of biodynamics.

**biodynamics**

That field concerned with the effects of external forces or dynamic conditions on biological systems. Also known as *impact biodynamics*.

**bioelectrical impedance analysis (BIA)**

A technique for estimating/measuring total body fat/lean body mass by observing the impedance of electricity passed through a part of the body.

**bioelectricity**

Electrical phenomena apparent in living cells.

**bioengineering**

The integration and application of knowledge in the fields of human biology, medicine, and engineering.

**biofeasibility**

A bioremediation feasibility study done to determine the applicability and potential success of a bioremediation technique or procedure for a given site.

**biofeedback**

The use of instrumentation to provide information to an organism which enables that organism to alter its behavior accordingly.

**biofilm**

An accumulation of microbial growth.

**biofilter**

See *biological filter*.

**bioflavonoid**

A generic term for a group of compounds widely distributed in plants and concerned with maintenance of a normal state of the walls of small blood vessels.

**biofoul**

Presence and growth of organic matter in a water system.

**biogas**

The gases produced by the anaerobic decomposition of organic matter.

**biogenesis**

The theory that living organisms arise only from other living organisms.

**biogeography**

The scientific study of the geographic distribution of living organisms.

**biogravics**

A branch of science, developed since the start of space flight, that studies the effects of weightlessness and excessive gravitational force on living organisms.

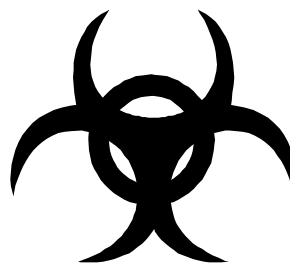
**biohazard**

(1) Term applied to organisms or products of organisms that present a health risk to humans. (2) It is also used to identify human blood, bloodborne products, or other forms of human wastes that may contain human bodily fluids which may present a health hazard to anyone who may come into unprotected contact with these materials. Derived from a combination of the words *biological* and *hazard*.

**biohazard area**

Any area in which work has been or is being performed with biohazardous agents or materials. The area is usually identified using the biohazard sign and/or symbol.

**CAUTION  
BIOLOGICAL  
HAZARD**



*Biohazard warning sign and symbol*

**bioisolation**

A condition in which biological systems are effectively separated from each other using any one or more of physical, chemical, or biological methods.

**biokinetics**

The branch of science that pertains to the study of living organisms.

**biologic agents**

Biologic organisms which cause infections or a disease, such as the spores that cause anthrax, which can be considered an occupational disease under certain circumstances.

**biologic test**

A measurement taken from biological media to determine the presence of a specific material or metabolite, or some other measurable effect on a worker which is a result of an exposure to a specific substance.

**biological clock**

Any hypothesized internal mechanism responsible for maintaining one or more biological rhythms. Sometimes referred to as *body clock*.

**biological contaminants**

Agents derived from or that are living organisms (e.g., viruses, bacteria, fungi, mammal and bird antigens) that can be inhaled and can cause many types of health effects including allergic reactions, respiratory disorders, hypersensitivity diseases, and infectious diseases. Also referred to as *microbiologicals* or *microbials*.

**biological control**

In pest control, the use of animals and organisms that eat or otherwise kill or out-compete pests.

**biological electricity**

The electricity created by living beings and cells.

**biological exposure index (BEI)**

Set of reference values established by the American Conference of Government Industrial Hygienists as guidelines for the evaluation of potential health hazards in biological specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the threshold limit value. The values apply to 8-hour exposures, 5 days per week.

**biological filter**

A bed of sand, stone, or other media through which wastewater flows that depends on biological action for its effectiveness. Sometimes referred to as *biotower*.

**biological half-life**

The time required for the body to eliminate one-half of an administered dose of any substance by regular process of elimination. This time is approximately the same for both stable and radioactive isotopes of a particular element.

**biological hazard**

See *biohazard*.

**biological magnification**

Refers to the process whereby certain substances such as pesticides or heavy metals move up the food chain, work their way into a river or lake, and are eaten by aquatic organisms such as fish, which in turn are eaten by large birds, animals, or humans. The substances become concentrated in tissues or internal organs as they move up the chain. See also *bioaccumulative*.

**biological monitoring**

(1) Periodic examination of blood, urine, or any other body substance to determine the extent of body absorption and retention of toxic materials. (2) The determination of the effects on life, including the accumulation of pollutants in tissue, due to the discharge of pollutants by techniques and procedures. This includes sampling of organisms representative of appropriate levels of the food chain and the volume and the physical, chemical, and biological characteristics of the effluent. Appropriate frequencies and locations are also considered.

**biological needs**

The basic physiological needs for a living entity to function, including air (oxygen), water, and food.

**biological oxidation**

The way bacteria and microorganisms feed on and decompose complex organic materials. Used in self-purification of water bodies and in activated sludge wastewater treatment.

**biological oxygen demand (BOD)**

A measure of the amount of oxygen consumed in the biological processes that break

down organic matter in water. The greater the BOD, the greater the degree of pollution.

**biological rhythm**

A self-maintained, cyclic variation within a relatively fixed period in a living organism. *See also circadian rhythm, infradian rhythm, ultradian rhythm, and circannual rhythm.*

**biological treatment**

The treatment technology that utilizes bacteria to consume waste. This treatment breaks down organic materials.

**biolysis**

Decomposition of organic matter by living organisms.

**biomarker**

A measurable biologic characteristic which has a definable relation to prior exposure to a substance.

**biomass**

All of the living material in a given area; often refers to vegetation. Also called *biota*.

**biome**

A biological community or ecosystem characterized by a specific habitat and climate such as a tropical rain forest or a desert.

**biomechanical profile**

Any combined set of biomechanical, electromyographic, motion, and other data recorded simultaneously during some activity.

**biomechanics**

The study of the human body acting as a system under the laws of Newtonian mechanics and the biological laws of life.

**biomedicine**

A field of medical science concerned with the ability of a human being to live and function in abnormal environments.

**biometeorology**

Scientific study of effects on living organisms of the extra-organic aspects (temperature, humidity, barometric pressure, rate of air flow, and air ionization) of the physical environment, whether natural or artificially created, and also their effects in closed ecological systems, as in satellites or submarines.

**biometer**

An instrument for measuring carbon dioxide given off by living tissue.

**biometrics**

*See biometry.*

**biometry**

The measurement of biological parameters and the use of simple descriptive statistics for the data obtained. Also referred to as *biometrics*. *See also biostatistics.*

**biomonitoring**

The use of living organisms to test water quality at a site further downstream.

**bion**

An individual living organisms.

**bionics**

The study of biological systems to derive knowledge for use in the design, modeling, development, and/or implementation of artificial systems.

**bio-oxidation**

*See biochemical oxidation.*

**biophysics**

Science dealing with the application of physical methods and theories to biological problems/effects, such as the interaction of radio frequency energies with living systems.

**biopsy**

The removal and examination of tissue from living mammals.

**biopure water**

Water that is sterile, pyrogen free, and has a total solids content of less than 1 mg/L.

**bioremediation**

Application of the natural ability of microbes to use waste materials in their metabolic processes and convert them into harmless end products.

**BIOS**

*See basic input output system.*

**biosafety cabinet**

A hood to control the dissemination of viable or non-viable particles of biological origin, microorganisms, and their decay products.

**biosampling**

The collection of samples (e.g., air, surface wipes, settling plates, etc.) to identify and quantify the presence of bioaerosols in the work environment.

**biosensor**

Any sensor in biotechnology which is com-

posed of living tissue, biological materials, or fabricated from basic biological materials.

**biosolids**

Primarily organic sludge or byproducts of wastewater treatment that can be beneficially recycled.

**biosorption process**

See *contact stabilization process*.

**biospheres**

The mass of living organisms found in a thin belt at the Earth's surface.

**biostabilizer**

A machine that converts solid waste into compost by grinding and aeration.

**biostatistics**

The use of statistical methodology to describe biological data or draw inferences from those data.

**biosynthesis**

The synthesis of a chemical within and by a living organism.

**biota**

All living organisms within a system. See also *biomass*.

**biotechnology**

Techniques that use living organisms or parts of organisms to produce a variety of products (from medicines to industrial enzymes) to improve plants or animals or to develop microorganisms for specific uses such as removing toxics from bodies of water, or as pesticides.

**biotherapy**

Treatment by means of living organisms and their products, including vaccines, immune serum, and blood transfusions.

**biotic**

Of or pertaining to life.

**biotic agent**

Microorganisms and parasites which act on the skin and body to produce disease.

**biotic community**

A naturally occurring assemblage of plants and animals that live in the same environment and are mutually sustaining and interdependent.

**biotower**

See *biological filter*.

**biotoxicology**

The scientific study of toxins produced by organisms, their effects, and the treatment of conditions they produce.

**bioturbation**

The net effect of the activity of benthic organisms at wastewater treatment plant discharges, which may aid in the dispersion of contaminants and increase the exchange of oxygen and nutrients between the sediment and water.

**bipolar**

(1) Having two poles. (2) Pertaining to both poles.

**bipolar disorder**

A psychosis characterized by abrupt or subtle behavioral manifestations of opposite extremes, such as manic-depressive disorder.

**bird fancier's disease**

Extrinsic allergic alveolitis observed in some individuals who have been exposed to birds. The condition is accompanied by breathlessness or tightness of the chest, coughing, and wheezing. Extensive fibrosis can be seen in the chronic form.

**birdyback**

Intermodal transportation system using highway freight containers carried by aircraft.

**birth rate**

The ratio of live births per some unit of existing population within a given period of time.

**birth-death process**

A queuing system in which units to be served or worked on arrive and depart in a random fashion.

**biserial correlation**

That correlation existing between two continuously distributed variables, but in which one of the variables has been scored as a dichotomous variable.

**bispinous breadth**

The transverse distance between the centers of the anterior superior iliac spines. Measured with the individual standing erect with weight evenly distributed on both feet.

**BIT**

See *Built-in Test*.



**bit**

(1) A numerical value in the binary scale, either zero (0) or one (1). The basic unit in a digital electronic system; contraction of binary digit. (2) That amount of information obtained when one of two equally likely alternatives is given or specified; the basic unit of information. *See also information theory.*

**BITE**

*See Built-in Test Equipment.*

**bitmap**

*Computing.* A graphic made up of a collection of colored dots. The computer stores the graphic as one or more *bits* of information for each dot (hence the name bitmap). Some filename extensions for graphic files that are bitmaps include .PCX, .TIFF, .BMP, and .GIF.

**bitrignon breadth**

The transverse width of the head as measured from right to left trignon. Measured with the individual sitting or standing erect with the scalp muscles relaxed.

**bitrignon-crinion arc**

The surface distance from right trignon, over the anterior hairline, to the left trignon. Measured with the individual sitting or standing erect with the scalp muscles relaxed.

**bitrignon-inion arc**

The surface distance from right trignon, over inion (including the hair), to left trignon. Measured with the individual sitting or standing erect with the scalp muscles relaxed.

**bitrignon-menton arc**

The surface distance from right trignon, under the anterior/inferior tip of the chin, to the left trignon. Measured with the individual sitting or standing erect with the jaws closed and the facial muscles relaxed.

**bitrignon-minimum frontal arc**

The surface distance from right trignon, over the forehead just above the brow, to left trignon. Measured with the scalp and facial muscles relaxed.

**bitrignon-posterior arc**

The surface distance from right trignon, across the base of the skull, to left trignon. Measured with the individual sitting or standing erect with the scalp muscles relaxed.

**bitrignon-submandibular arc**

The surface distance from right trignon, under the gonial angles of the jaw, to left trignon. Measured with the individual sitting or standing erect with the jaws closed and the scalp and facial muscles relaxed.

**bitrignon-subnasale arc**

The surface from right trignon, across subnasale to left trignon. Measured with the individual sitting or standing erect and the scalp and facial muscles relaxed.

**bitrochanteric breadth**

The horizontal linear distance between the most lateral projections of the right and left greater trochanters. Measured with the flesh compressed and the individual standing erect with weight distributed equally on both feet. Also referred to as *bitrochanteric width*.

**bituminous coal**

A coal high in carbonaceous matter that yields a considerable amount of volatile waste matter when burned.

**bivalent**

Having a valence of two.

**bivariate regression**

A special case of multiple regression in which the number of predictor variables is two.

**bizygomatic breadth**

The transverse width of the face across the most lateral protrusions of the zygomatic arches. Also referred to as *face breadth*.

**black**

Having the property of absorbing all or most of the incident visible light.

**black body**

A hypothetical ideal body which absorbs all incident radiation, independent of wavelength and direction.

**Black Death**

The bubonic plague, which first occurred in Europe in epidemic form during the fourteenth century; characterized by black spots on the skin.

**black eye**

A bruise of the tissue around the eye marked by discoloration, swelling, and pain.

**black globe thermometer**

Typically a 6-inch hollow, thin-wall, copper sphere painted flat black with an ordinary

thermometer placed into the globe at the center.

**black light**

The region of the electromagnetic spectrum between 300 nm and 400 nm in the ultraviolet (UV) region. It is the region responsible for the added pigmentation of the skin (burning and tanning) following exposure to UV light.

**black liquor**

Strong organic waste generated during kraft pulping process.

**Black Lung Benefits Act**

Federal statute benefiting coal miners who are stricken with pneumoconiosis, a chronic dust disease of the lung. Benefits under the Act are administered by the Department of Labor. *See also black lung disease.*

**black lung disease**

A disease contracted by coal miners and marked by varying degrees of pulmonary impairment, including x-ray abnormalities, cough, breathlessness, massive progressive fibrosis, formation of nodules and scar tissue in the lungs. Also known as *coal miner's pneumoconiosis*, *Collier's disease*, and *Shaver's disease*.

**black sand**

Discoloration of filter sand resulting from manganese deposits.

**blackbody**

A surface which, ideally, absorbs all incident visible light energy and emits radiant energy with a spectral distribution varying according to the absolute temperature of the surface. Synonyms include *ideal blackbody*, *blackbody source*, *Planckian radiator*, *blackbody radiator*, *full radiator*, *standard radiator*, *ideal radiator*, and *complete radiator*.

**blackbody locus**

A set of points representing the chromaticities of a potential set of blackbodies with various color temperatures on a chromaticity diagram. Also referred to as *Planckian locus*.

**blackbody radiator**

*See blackbody.*

**blackbody source**

*See blackbody.*

**blackmail**

The unlawful demand of money or property under threat to do bodily harm, to injure property, to accuse of crime, or to expose disgraceful defects. This crime is commonly included under extortion or criminal coercion statutes. *See also extortion.*

**blackout**

A temporary loss of vision, regardless of the cause. *See also grayout and gravity-induced loss of consciousness.*

**blackwater**

Water that contains animal, human, or food wastes.

**blackwater fever**

An acute form of malaria occurring in tropical and semitropical regions, characterized by febrile paroxysms and bloody urine.

**bland**

Not having a stimulating taste characteristic.

**blank QA (spiked) sample**

Sampling media spiked by quality assurance personnel with selected compounds at known amounts for submitting to the analytical laboratory along with regular samples to determine analyte recovery effectiveness, possible effects of sample storage/shipment/etc.

**blank sample**

A non-contaminated or otherwise clean sample medium sent along to a testing laboratory along with actual sample results that is used to help determine sample inaccuracies or other compromising conditions. *See also field blank sample.*

**blanket certificate (authority)**

Permission granted by the Federal Energy Regulatory Commission (FERC) for a certificate holder to engage in an activity (such as transportation service or sales) on a self implementing or prior notice basis, as appropriate, without case-by-case approval from FERC.

**blanking**

The absolute closure of a pipe, line, or duct by the fastening of a solid plate (such as a spectacle blind or skillet blind) that completely covers the bore and that is capable of withstanding the maximum pressure of the pipe, line, or duct with no leakage beyond the plate. Also called *blinding*.

**blast furnace**

Furnace used in the iron-making process in which hot blast air flows upward through the raw materials and exits at the furnace top.

**blast gate**

A device that regulates airflow in duct work, similar to a damper, but usually operated by positioning a sliding metal plate across a duct.

**blasting agent**

Any material or mixture consisting of fuel and oxidizer intended for blasting, not otherwise classified as an explosive and in which none of the ingredients is classified as an explosive, provided that the finished product as mixed and packaged for use or shipment cannot be detonated by means of a number 8 blasting cap when confined.

**blastomycosis**

Term for any infection caused by a yeast-like organism.

**bleach**

Oxidizing compound, usually containing chlorine combined with calcium or sodium.

**bleed**

To draw accumulated liquid or gas from a line or container.

**bleeder**

(1) The popular term for a person who bleeds freely, especially one suffering from a condition in which the blood fails to clot properly. *See hemophilia.* (2) A large blood vessel divided during surgery. (3) In pressure systems, a faulty valve or pressure relief device that is releasing gaseous materials unexpectedly or at an inappropriate time.

**bleeding**

(1) The escape of blood, as from an injured vessel. (2) Purposeful withdrawal of blood from a vessel of the body. (3) Intentional release of gaseous or liquid commodities from a pressure system for the purpose of reducing system pressures.

**BLEVE**

*See boiling liquid expanding vapor explosion.*

**blind**

(1) Not having certain information regarding ongoing activities in an experiment. *See also double blind.* (2) Having no visual capability, or having a Snellen visual acuity less than 20/200 even using corrective lenses. *See also*

*Snellen acuity and Snellen test.* (3) Pertaining to a ship or other military vehicle which has lost its radar or other sensing capabilities. (4) Typically, a metal plate that serves as an absolute means to seal off a pipe, line, or duct from another section of the process. It completely covers the bore of the pipe, line, or duct and is capable of withstanding the maximum pressure present with no leakage beyond the plate.

**blind flange**

A pipe flange with a blind end used to close the end of a pipeline.

**blind positioning**

A movement which requires the placement of one or more objects at some orientation or point in space without visual cues.

**blind sample**

A sample medium sent along to a testing laboratory that has been pre-conditioned at the sample site with known contaminant levels that are not reported to the laboratory and is used to determine the accuracy of a laboratory analysis.

**blind side**

Right side of truck and trailer.

**blind speed**

The rate of departure or closing of a target relative to the radar antenna at which cancellation of the primary radar target by moving target indicator (MTI) circuits in the radar equipment causes a reduction or complete loss of signal.

**blind spot**

(1) *Physiology.* Normal defect of vision caused by the position of the optic nerve at the point where it enters the eye; that region of the posterior eyeball where no photoreceptors are located due to the optic neural fibers exiting the eyeball. (2) *Transit.* Any region on or around a vehicle at which another object may not be readily seen due to lack of mirror coverage or inability to view directly. (3) *Communication.* An area from which radio transmissions and/or radar echoes cannot be received. The term is also used to describe portions of the airport not visible from the control tower. Also referred to as *blind zone.*

**blind thrust fault**

*Seismology.* A shallow-dipping reverse fault which terminates before it reaches the surface.

When it breaks, therefore, it may produce uplift, but never any clear surface rupture. Many still-unknown blind thrust faults may exist in southern California. Two examples of known blind thrust faults are the Elysian Park Thrust, which runs underneath downtown Los Angeles and the Northridge Thrust Fault, which ruptured in the 1994 Northridge quake.

**blind velocity**

The radial velocity of a moving target such that the target is not seen on primary radar fitted with certain forms of fixed echo suppression.

**blind zone**

See *blind spot*.

**blinding**

The reduction or cessation of flow through a filter resulting from solids restricting the filter openings. See also *blanking*.

**blinding glare**

Any extremely intense glare which interferes with vision for a significant period of time after removal of the glare source.

**blink**

(1) A unit of time equal to 0.864 seconds or 10-5 day. (2) Turn quickly on and then off at approximately regular intervals. (3) See *eye blink*.

**blink coding**

The use of a blinking stimulus as a highlighting or attention-getting technique.

**blink rate**

(1) That number of occasions which a light or segment of a display turns on and off within a specified interval. (2) See *eye blink rate*.

**blip**

A brief visual signal of higher intensity or different quality from the background, which may enable or enhance detection.

**blizzard**

A severe weather condition characterized by low temperatures and strong winds (greater than 32 mph) bearing a great amount of snow. When these conditions continue after falling snow has ended, it is termed a *ground blizzard*.

**BLM**

See *Bureau of Land Management*.

**block**

*Rail*. A length of track of defined limits, the use of which by trains is governed by block signals, cab signals, or both.

**block and tackle**

A combination of a rope or other line material and an independent pulley. Used to increase mechanical efficiency.

**block signal**

A roadway signal operated either automatically or manually at the entrance to a block.

**block signal system**

A method of governing the movement of trains into or within one or more blocks by block signals or cab signals.

**block to block time**

See *flight time*.

**blocked**

*Communication*. Phraseology used to indicate that a radio transmission has been distorted or interrupted due to multiple simultaneous radio transmissions.

**blood**

The viscous red bodily fluid, consisting of plasma and the formed elements, which carries nutrients, waste products, and body defensive mechanisms through the cardiovascular system.

**Blood Alcohol Concentration (BAC)**

Measured as a percentage by weight of alcohol in the blood (grams/deciliter). A positive BAC level (0.01 g/dl and higher) indicates that alcohol was consumed by the person tested. A BAC level of 0.10 g/dl or more indicates that the person was intoxicated.

**blood alcohol count**

Refers to the standard measure for legal intoxication under state DWI laws. In most states, a person can be charged with "driving while intoxicated" with a blood alcohol level of .10 percent or higher. See also *driving while intoxicated*, *blood alcohol concentration*, and *breathalyzer test*.

**blood count**

The number of erythrocytes or white blood cells in a cubic millimeter of blood.

**blood dyscrasia**

Any persistent change from normal of one or more components of blood.

**blood-forming organs (BFO)**

The red bone marrow tissue and the spleen.

**blood level**

The concentration of a material, such as lead, in the blood. Typically reported as micrograms per 100 grams of blood or micrograms per 100 mL (i.e., deciliter) of blood).

**blood plasma**

The clear, almost colorless fluid of the blood when separated from blood corpuscles by centrifuging; used in blood transfusions, since it clots as easily as whole blood.

**blood platelet**

A minute circular or oval body found in blood, necessary for blood clotting.

**blood poisoning**

See *toxemia*.

**blood pressure**

That force exerted on the internal heart and vessel walls of the circulatory system by the blood. See also *systolic blood pressure* and *diastolic blood pressure*.

**blood priority**

Figurative reference to management's approach to accident investigation, in the early years during and following the industrial revolution (United States). Very simply, if there was no blood spilled, then there was no real priority for any action (or budget), and even less management interest.

**blood products**

Any product derived from blood, including but not limited to blood plasma, platelets, red and white blood corpuscles, and other derived licensed products such as interferon.

**blood serum**

The yellowish, clear liquid remaining after all solid constituents of the blood have been removed.

**blood sugar**

Glucose, supplied by the liver, circulating in the blood.

**blood test**

The test of a blood sample to determine such qualities as blood type, or such quantities as sugar content. Also used to determine if a person has ingested quantities of substances beyond a legally established limit (e.g., alcohol, drugs).

**blood test evidence**

Blood may be extracted against the will of a person without offense to Fifth Amendment rights (U.S. Constitution) when arrested for driving while intoxicated. See also *blood alcohol count* and *DNA identification*.

**blood type**

The phenotype of erythrocytes defined by one or more antigenic determinants. Under the usual system of blood typing, there are four main blood types of blood groups: A, B, O, and AB. The ABO blood typing system was first introduced in 1900 by Karl Landersteiner and is still generally used today as the basis for transfusing whole blood. It is now known, however, that many different antigens exist in the red blood cells, and that as many as 11 or more different antigenic systems of grouping blood can be recognized. Even within the ABO system, numerous subgroups of the main groups exist.

**blood worm**

The larval stage of the midge fly.

**bloodborne pathogens**

Pathogenic microorganisms that are present in human blood and can cause disease in humans. These pathogens include, but are not limited to, hepatitis B virus (HBV) and the human immune deficiency virus (HIV).

**blow down**

A discharge from a recirculating system designed to prevent a buildup of some material.

**blow him down**

*Boating Safety*. To sound the danger signal in case of misunderstood passing signals, when the pilot on the other boat refuses to obey signals, or when just desiring to pass information.

**blower**

Air-conveying equipment that generates pressures up to 103 kPa (15 pounds per square inch), commonly used for wastewater aeration systems.

**blowout**

An uncontrolled flow of gas, oil, or other well fluids into the atmosphere.

**BLS**

Bureau of Labor Statistics.

**blue**

A primary color, corresponding to that hue



apparent to the normal eye when stimulated only with electromagnetic radiation approximately between wavelengths from 455 nm to 490 nm.

**blue asbestos**

See *crocidolite asbestos*

**blue baby syndrome**

See *methemoglobinemia*.

**blue blindness**

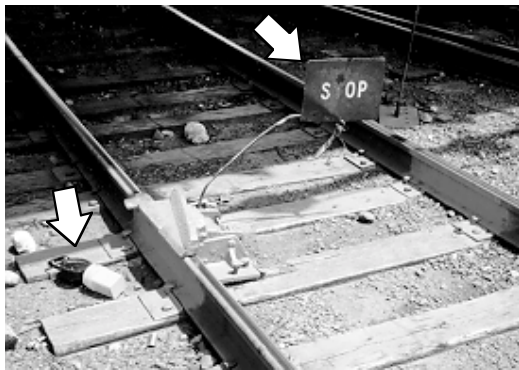
See *tritanopia*.

**blue collar**

Pertaining to those workers typically doing production work, as opposed to management personnel strictly doing administrative work.

**blue signal**

*Railroad Safety.* A clearly distinguishable blue flag or blue light by day and a blue light at night. When attached to the operating controls of a locomotive, it need not be lighted if the inside of the cab area of the locomotive is sufficiently lighted so as to make the blue signal clearly distinguishable.



Typical blue signals. Arrows indicate a blue flag (on right) and a blue light (on left, not activated during daylight hours)

**blue vitrol**

Common name for copper sulfate, used to control algae. See *copper sulfate*.

**blue-yellow blindness**

A rare form of color blindness in which the individual cannot differentiate between blue and yellow.

**bluff bar**

A sandbar having a sharp drop-off into deep water. Also called a *bluff reef*.

**blur**

A condition in which an image is not well focused.

**BLWRS**

See *barrier landscape water renovation system*.

**BMI**

See *body mass index*.

**BMP**

See *best management practices*.

**BMR**

See *basal metabolic rate*.

**BNR**

Biological nutrient removal.

**Board**

(1) An official or representative body organized to perform a trust or to execute official or representative functions of having the management of a public office or department exercising administrative or governmental functions. (2) Lodging, food, and entertainment, furnished to a guest at an inn or boarding house.

**Board of Adjustment**

Public and quasijudicial agency charged with the duty to hear and determine zoning appeals. Also called *Board of Zoning Appeals* in certain cities.

**Board of Aldermen**

The governing body of a municipal corporation. See also *alderman*.

**Board of Appeals**

A non-judicial, administrative tribunal which reviews the decision made by the hearing officer or by the head of the agency.

**Board of Certified Safety Professionals (BCSP)**

The BCSP was originally organized as a peer certification board in 1969 with the purpose of certifying those who practice in the safety profession. The specific functions of the BCSP, as outlined in its charter, are to evaluate the academic and professional experience qualifications of safety professionals, to administer examinations, and issue certifications to those professionals with demonstrated qualifications who have met the BCSP criteria and successfully passed its examinations.

**Board of Commissioners**

A legal body of 3 to 9 individuals having broad administrative authority over a river port's operation. This board is primarily con-



cerned with the development and determination of policies of the port authority.

#### **Board of Directors**

The governing body of a corporation elected by the stockholders; usually made up of officers of the corporation and outside (non-company) directors. The board is empowered to elect and appoint officers and agents to act on behalf of the corporation, declare dividends, and act on other major matters affecting the corporation.

#### **Board of Fire Underwriters**

An unincorporated voluntary association composed exclusively of persons engaged in the business of fire insurance, for consolidation and cooperation in matters affecting the business.

#### **Board of Governors of the Federal Reserve System**

Seven-member board, with fourteen-year terms, which governs the twelve Federal Reserve Banks and branches. The Board of Governors determines general monetary, credit, and operating policies for the System as a whole and formulates the rules and regulations necessary to carry out the purposes of the Federal Reserve Act. The Board's principal duties consist of exerting an influence over credit conditions and supervising the Federal Reserve Banks and member banks.

#### **Board of Health**

A municipal or state board or commission with certain powers and duties relative to the preservation and improvement of the public health.

#### **Board of Pardons**

State board, of which the governor is usually a member, authorized to review and grant pardons and clemency to convicted prisoners.

#### **Board of Review**

Board authorized to review administrative agency decisions and rulings. Body authorized to review alleged improper valuation and assessment of property. In some cities, a board charged with responsibility to review alleged police brutality or excessive force.

#### **Board of Zoning Appeals**

See *Board of Adjustment*.

#### **boat**

See *barge, general cargo ship, motorboat, towboat, tugboat, and vessel*.

#### **boat trailer**

A trailer designed with cradle-type mountings to transport a boat and configured to permit launching of the boat from the rear of the trailer.

#### **boat transporters**

Any vehicle combination designed and used specifically to transport assembled boats and boat hulls. Boats may be partially disassembled to facilitate transporting.

#### **Boating Safety Circular (BSC)**

Published by COMDT (G-NAB) for free distribution to boat and equipment manufacturers, dealers, marinas, yacht clubs, OCMI personnel, and other boating organizations. Information in the BSC concerns boating standards and boating safety in general.

#### **boatswain**

A seaman who superintends the work of the crew. The foreman of sailors.

#### **boatswain's chair**

A seat, suspended from a higher level by slings attached to a rope, that allows the occupant to safely perform work at heights above the ground level but below the chair's suspension point. It has provisions for proper occupant securing and protection.



*Worker seated in boatswain's chair*

#### **BOCA**

Building Officials and Code Administrators

#### **BOD**

See *biological oxygen demand*.

**BOD<sub>5</sub>**

Five-day carbonaceous or nitrification-inhibited biological oxygen demand. *See also* [biological oxygen demand](#).

**BOD<sub>u</sub>**

*See* [ultimate BOD](#).

**bodily injury**

(1) Any injury to an individual from mechanical or physical processes. (2) Injury to the body, sickness, or disease including death resulting from any of these.

**body**

(1) *Anatomy*. The human frame, including all its organs, tissues, and other normal materials. (2) *Automotive*. Semitrailer. *See also* [chassis](#).

**body breadth, maximum**

The maximum linear horizontal distance across the body, including the arms. Measured with the individual standing erect and the arms hanging naturally at the sides; for accuracy and future reference, specify the level at which the measure is taken.

**body burden, maximum permissible**

(1) *Radiation*. An amount of radioactive material in a critical organ such that the whole-body dose is 0.3 rem per week or less; in case of an alpha or beta emitter that is deposited in the bone, body burden is derived from the long-established maximum permissible body burden of radium (0.1 microcurie) adjusted for possible less uniform deposition. (2) *Biological*. The total amount of a substance stored in the body following exposure. The body burden of a particular substance is a function of its biological half-life and its biochemical uptake and elimination rate.

**body clock**

*See* [biological clock](#).

**body composition**

The proportions of tissue makeup in the body, generally classified by two primary categories as a function of body mass: lean body mass and body fat.

**body depth, maximum**

The maximum horizontal distance between two vertical planes which represent the most anterior and posterior aspects of the torso. Measured with the individual standing erect and arms hanging naturally at the sides; for

accuracy and future reference, specify exactly where the measurement is taken.

**body envelope**

That volume which includes the body and any protective clothing or other items required during performance of a specific task.

**body fat**

That portion of body composition which is composed of adipose tissue

**body feed**

Coating material added to the influent of pre-coat filters during filtration cycle.

**body fluids**

Liquid emanating or derived from humans including blood, dialysis, amniotic, cerebrospinal, synovial, pleural, peritoneal, and pericardial fluids, as well as semen and vaginal secretions.

**body heat content (H<sub>b</sub>)**

The mathematical product of the body's heat capacity and the mean temperature of body tissues.

**body height**

*See* [stature](#).

**body mass**

The total mass of the body.

**body mass index (BMI)**

A guideline for estimating the percentage of body fat and nutritional status of the body. Represented as

$$BMI = \frac{\text{weight}}{(\text{stature})^2}$$

**body motion**

The movement of one or more body parts which involves a mass redistribution within some coordinate system.

**body of the crime**

*See* [body of the offense](#).

**body of the offense**

When applied to any particular offense, means that the particular crime charged has actually been committed by someone. Also referred to as *body of the crime*.

**body position**

*See* [posture](#).

**body proportionality**

The distribution of an individual's circumference measurements.

**body segment**

Any portion of the body located between two joints, or the terminal portion of a body part from a joint, which has a relatively constant geometry when moved.

**body surface**

Any part or all of the total surface area of the body.

**body surface area**

The total surface area of the body.

**body temperature and pressure, saturated conditions (BTPS)**

The air mixture saturated with water vapor at ambient body temperature, as found in the lung alveoli or exhaled air.

**body type**

*Automotive.* Refers to the individual classifications of motor vehicles by their design structure based on definitions developed by the Society of Automotive Engineers, such as 1) the appearance of the vehicle, and 2) detailed type of motor vehicle within a vehicle type.

**body typology**

Any of various attempts to ascribe behaviors and personality characteristics to the shape or composition of an individual's body. *See also somatotype.*

**body versus machine rule**

A task design guideline that the machine should not be capable of injuring the worker during any phase of a task.

**body volume**

The total volume occupied by the body.

**body weight**

The nude weight of an individual. Measured under standard conditions.

**body-load aggregate**

The combined effect of the weight being manipulated and the weight of those parts of the body involved in a materials handling or lifting task.

**BOEMAN**

A computerized, human modeling package for aiding design and evaluation of reach capa-

bilities in cockpits and other aircraft workstations.

**bog**

Poorly drained land filled with decayed organic matter that is wet and spongy and unable to support any appreciable weight.

**bogey**

*Automotive.* An assembly of two or more axles.

**bogie**

(1) *Automotive.* A set of wheels built specifically as rear wheels under the container. (2) *Aviation (slang).* Term used to describe an unidentified "target" sighted by the pilot of an aircraft. Usually a military term.

**BOHS**

British Occupational Health Society.

**boil**

(1) *Physiology.* A local infection of the skin containing pus and showing on the surface as a reddened, tender swelling; a type of skin abscess. Also called *furuncle*. (2) *Hydrology.* Turbulence in the water caused by deep holes, ends of dikes, channel changes, or other such submerged obstructions. Indicates a changing channel condition. A boil is easily detected by electronic depth sounders by rapidly changing depths appearing as waves on the tracing paper.

**boil out**

An evaporator-cleaning process where wash water is boiled in an evaporator to remove scale deposits.

**boiler**

A pressure vessel in which water is continuously vaporized into steam by the application of heat.

**boiler deck**

*See cabin deck.*

**boiler feed water**

Water that, in the best practice, is softened and/or demineralized and heated to nearly boiling temperature and deaerated before being pumped into a steam boiler.

**boilermaker's deafness**

A form of hearing impairment in which an individual hears better under noisy conditions than in quiet. Caused by working for long periods around loud noises.

**boilerplate**

(1) Language which is used commonly in documents having a definite meaning in the same context without variation. (2) Used to describe standard language in a legal document that is identical in instruments of a like nature.

**boiling liquid expanding vapor explosion (BLEVE)**

A violent rupture of a pressure vessel containing saturated liquid/vapor at a temperature well above its normal boiling point. A BLEVE often occurs when a fire adjacent to a tank holding a volatile flammable commodity causes the commodity's temperature to increase thereby causing a subsequent increase in the pressure inside the tank. As the liquid reaches its boiling point, the pressure becomes too great for the tank to contain. The resulting explosion is violent and, once the contained liquid ignites (either as a result of the explosion or upon contact with the fire outside), the resulting deflagration can be devastating.

**boiling point**

The temperature at which a liquid's vapor pressure equals the pressure acting on the liquid.

**boiling point elevation (BPE)**

The difference between the boiling point of a solution and the boiling point of pure water at the same pressure.

**bold reef**

A bluff reef which acts like a weir and is plainly visible for quite some distance.

**bold right-hand reef**

A sandbar or group of rocks which can be seen or detected by water turbulence, located on the right bank of the channel.

**boll weevil**

(1) *Agriculture*. A pest (beetle) that typically infests and destroys cotton bolls. (2) *Transit (trucking slang)*. A novice truck driver.

**bolometer**

An instrument which measures radiant heat by correlating the radiation-induced change in electrical resistance of a blackened metal foil with the amount of radiation absorbed.

**bolt lock**

With respect to rail operations, a mechanical lock so arranged that if a switch, derail or movable-point frog is not in the proper position for a train movement, the signal governing that movement cannot display an aspect to proceed; and that will prevent a movement of the switch, derail or movable-point frog unless the signal displays its most restrictive aspect.

**bolus**

A cohesive mass, either of food material for swallowing or of fecal material following defecation.

**BOM**

See *Bureau of Mines*.

**bomb calorimeter**

An instrument used to determine the heat content of sludge or other material.

**bona fide**

In or with good faith; honestly, openly, and sincerely; without deceit or fraud.

**bond**

(1) A form of monetary security given to secure the performance of some act or to provide funds if some problem arises. (2) An equalization of electrical potential between objects. (3) The linkage between atoms or radicals of a chemical compound, or the symbol representing this linkage and indicating the valance of the atoms or radicals.

**bonded petroleum imports**

Petroleum imported and entered into Customs bonded storage. These imports are not included in the import statistics until they are 1) withdrawn from storage free of duty for use as fuel for vessels and aircraft engaged in international trade, or 2) withdrawn from storage with duty paid for domestic use.

**bonding**

(1) An electrical conductor, or the act of attaching such conductor, to eliminate a difference in electrical or electrostatic potential that would cause a spark to occur between objects. (2) The permanent joining of metallic parts to form an electrically conductive path which will assure electrical continuity and the capacity to safely conduct any current likely to be imposed.

**bonding jumper**

A reliable conductor to assure the required electrical conductivity between metal parts required to be electrically connected.

**bone**

The skeletal tissue of vertebrates consisting of cells arranged in a matrix of collagen fibers and cells containing calcium and phosphate.

**bone conduction**

The passage of sound waves to the inner ear via the bones of the skull.

**bone conduction test**

A hearing test in which the audiometer oscillator or tuning fork is placed against the mastoid process of the temporal bone.

**bone marrow**

Soft material that fills the cavity in most bones. It manufactures most of the formed elements of the blood.

**bone seeker**

Any compound or ion in the body that migrates preferentially to the bone.

**BOO**

Acronym for build, own, operate.

**booking**

Arrangements with steamship companies for the acceptance and carriage of freight.

**boom**

(1) A floating barrier used to contain oil on a body of water. (2). In rigging, a boom is a timber or metal section or strut, pivoted or hinged at the heel (lower end) at a location fixed in height on a frame or mast or vertical member, and with its point (upper end) supported by chains, ropes, or rods to the upper end of the frame, mast, or vertical member.

**boom harness**

The block and sheave arrangement on the boom point to which the topping lift cable is reeved for lowering and raising the boom. *See also boom (2).*

**boom it down**

Tighten chains around freight.

**boom point**

The outward of the top section of the boom.

**boomers**

Binder devices used to tighten chains around cargo on flatbed trailers.

**boosted fire**

A fire wherein some inflammable substance, other than that which the building was constructed or which it contained, contributed to it burning. *See also arson.*

**booster pump**

A pump used to raise the pressure of the fluid on its discharge side.

**boot**

(1) A covering for the foot. (2) The act of restarting computer hardware, usually so that newly installed software and/or peripherals can be properly sequenced into the system's startup configuration process. As opposed to a *warm boot*, this process usually requires turning the computer off and then back on again. *See also warm boot.*

**BOOT**

Acronym for build, own, operate, transfer.

**borborygmus**

The involuntary rumbling sound caused by the movement of gas or fluid in the large intestine.

**border cargo selectivity (BCS)**

An automated cargo selectivity system based on historical and other information. The system is designed to facilitate cargo processing and to improve Customs enforcement capabilities by providing targeting information to border locations. The system is used for the land-border environment.

**borderline between comfort and discomfort**

*See comfort-discomfort boundary.*

**bore hole**

A manmade hole in a geological formation.

**boreal forest**

*See taiga.*

**boredom**

A form of mental fatigue generally due to lack of stimulation, lack of interest in the ongoing activity, isolation, performance of a monotonous task, other similar situations, or some combination of these situations.

**Borg scale**

*See rating of perceived effort scale.*

**boric acid**

A crystalline powder, formerly used as a household antiseptic for treating minor irritations of the skin and eyes. Because the pow-

der is highly poisonous when taken internally, and since other antiseptics are more effective, boric acid is no longer recommended. Boric acid ointment (for external use only) is occasionally helpful in cases of mild skin irritations or in keeping a gauze dressing from sticking to a wound.

**boron**

A chemical element, atomic number 5, atomic weight 10.811, symbol B.

**borrowed employee**

An employee of one employer who provides services to another, under an agreement between the two employers. Before a person may be considered an borrowed employee, his/her services must be loaned with his acquiescence or consent and he/she must become wholly subject to control and direction of the second employer, and free during the temporary period from the control of the original employer. Under the borrowed employee doctrine, if one to whom an employee is lent is the "master of the servant" at the very time a negligent act occurs, it is upon the master, as a special employer, that liability rests. But if the one lending the employee is considered the master at the very time of injury, then he/she, as general employer, incurs liability.

**botanical insecticide**

A pesticide whose active ingredient is a plant-produced chemical such as nicotine or strychnine.

**Botsball**

A small copper sphere, painted black and covered with a sized black mesh wetted fabric, which contains a thermometer for estimating heat stress. *See also wet globe temperature.*

**Bottle Bill**

Term applied to proposed or enacted legislation which requires a returnable deposit on beer or soda containers and provides for retail store or other redemption centers. Such legislation is designed to discourage the use of throwaway containers.

**bottlers body**

Truck body designed for hauling cased, bottled beverages.

**bottom**

The portion of the ground surface which lies below water.

**bottom ash**

The noncombustible particles that fall to the bottom of a boiler furnace.

**bottom dumps**

Trailer that unloads through bottom gates.

**bottom land hardwoods**

Forested freshwater wetlands adjacent to rivers in the southeastern United States. They are especially valuable for wildlife breeding and nesting and habitat areas.

**bottom shell**

That portion of a tank car tank surface, excluding the head ends of the tank car tank, that lies within two feet, measured circumferentially, of the bottom longitudinal centerline of the tank car tank.

**bottom time**

That length of time a diver has been at depth in an underwater dive or at maximum pressure in a hyperbaric chamber for treatment of decompression sickness.

**botulin**

A toxin sometimes found in imperfectly preserved or canned meats and vegetables.

**botulism**

A severe illness resulting from ingestion of the toxin from the strictly anaerobic bacillus *Clostridium botulinum*. The illness may cause blurred vision, sore throat, or other symptoms of a nervous system disorder. Since these toxins generally disrupt nerve impulse transmission, they are referred to as neurotoxins. Vomiting, diarrhea, or constipation may also occur. If death occurs, it is usually the result of respiratory paralysis.

**Boulder winds**

Fast-flowing, local downslope winds that may attain speeds of 100 knots or more. They are especially strong along the eastern foothills of the Rocky Mountains near Boulder, Colorado (hence the name).

**bound water**

Water held on the surface or interior of colloidal particles.

**boundary**

(1) Every separation, natural or artificial,



which marks the confines or line of division of two contiguous properties. (2) A non-physical line indicating the limit or extent of an area or territory.

**boundary representation**

A technique used in solid computer modeling where the geometry is defined in terms of its edges and surfaces.

**bounty**

A gratuity, or an unusual or additional benefit conferred upon, or compensation paid to, a class of persons.

**bounty hunter provision**

Under the Clean Air Act of 1990, a provision which authorizes EPA to pay a bounty of up to \$10,000.00 to anyone who provides information that leads to a civil penalty or criminal conviction. This provision applies to current as well as past employees.

**Bourdon tube**

A closed, curved, flexible tube of elliptical cross-section which responds to changes in barometric pressure and provides a measurement of that parameter.

**bovine**

Pertaining to, characteristic of, or derived from the ox (cattle).

**bow**

(1) *Structural dynamics*. The deflection of a portion of structure caused by a pressure differential on the two sides. (2) *Boating*. The front of a vessel.

**Bowen's disease**

A pre-cancerous condition characterized by scaly skin lesions resembling psoriasis and showing microscopic changes in the epidermal cells.

**bowleg**

A deformity in which the space between the knees is abnormally large.

**box**

*Transit*. (1) A semitrailer. (2) The transmission part of the tractor.

**boxcar**

A closed rail freight car.

**boycott**

Concerted refusal to do business with a particular person or business to obtain conces-

sions or to express displeasure with certain acts or practices of the person or business.

**Boyle's law**

The volume of a mass of gas is inversely proportional to the pressure, provided the temperature remains the same.

**bp**

See *boiling point*.

**BPE**

See *boiling point elevation*.

**BPR**

(1) Biological phosphorus removal. (2) Boiling point rise.

**Bq**

See *becquerel*.

**brace**

In scaffolding construction, a tie that holds one scaffold member in a fixed position with respect to another member.

**brachium**

The upper arm.

**brackish water**

Water containing a low concentration of soluble salts, usually between 1000 and 10,000 mg/L.

**bradyarthria**

See *bradylalia*.

**bradycardia**

A lower than normal heart rate, usually less than 60 beats per minute. The condition may occur following an infectious or febrile disease or it may be a symptom of a disorder of the conduction system of the heart. It sometimes occurs with increased intracranial pressure, obstructive jaundice, and myxedema. It should be noted that a heart rate and pulse of less than 60 beats per minute can occur in normal persons, particularly during sleep. Trained athletes usually have a slow heart and pulse rate; opposite of *tachycardia*.

**bradykinesia**

Any movement disorder in which body movements are slowed.

**bradylalia**

A very slow articulation in speaking due to central nervous system lesion.

**bradylexia**

An abnormal slowness in reading.

**Braille**

A communication system for the blind which uses tactile characters.

**brain**

The mass of soft, spongy, pink-gray nerve tissue occupying the cranial cavity, consisting of the cerebrum, cerebellum, pons, and medulla oblongata, and connecting at its base with the spinal cord. The human brain weighs about 3 pounds. The brain consists of billions of nerve cells, intricately connected with each other. It contains centers (groups of neurons and their connections) which control many involuntary functions, such as circulation, temperature regulation, and respiration, and interpret sensory impressions received from the eyes, ears, and other sense organs. Consciousness, emotion, thought, and reasoning are functions of the brain. It also contains centers or areas for associative memory which allow for recording, recalling, and making use of past experiences.

**brain potential**

Any recordable electrical difference between two or more locations on the scalp or brain. *See also electroencephalogram and evoked potential.*

**brain stem**

That portion of the brain which is continuous with the spinal cord and lies beneath the cerebellum and cerebral hemispheres, containing neurons governing many of the body's vital functions.

**brain wave**

The recorded or observed varying electrical potentials from the brain. *See also electroencephalogram and evoked potential.*

**brainstorm**

Propose and discuss ideas, freely and without criticism, in an attempt to discover all possible approaches to a situation.

**brake**

An energy conversion mechanism used to stop, or hold a vehicle stationary.

**brake horsepower (bhp)**

The power developed by an engine as measured by a dynamometer applied to the shaft or flywheel.

**brake pipe**

A pipe running from the engineman's brake valve through the train, used for the transmis-

sion of air under pressure to charge and actuate the automatic brake equipment and charge the reservoirs of the electro-pneumatic brake equipment on each vehicle of the train.

**brake shoe**

The non-rotating portion of a tread or disc brake assembly. The shoe is pressed against the tread, disc, or drum when the brake is applied.

**brake tubing/hose**

Metallic brake tubing, nonmetallic brake tubing and brake hose are conduits or lines used in a brake system to transmit or contain the medium (fluid or vacuum) used to apply the motor vehicle's brakes.

**braking action**

*Aviation.* A report of conditions on the airport movement area providing a pilot with a degree/quality of braking that he/she might expect. Braking action is reported in terms of good, fair, poor, or nil.

**Braking Action Advisories**

*Aviation.* When tower controllers have received runway braking action reports which include the terms "poor" or "nil," or whenever weather conditions are conducive to deteriorating or rapidly changing runway braking conditions, the tower will include on the Automated Terminal Information Service (ATIS) broadcast the statement, "BRAKING ACTION ADVISORIES ARE IN EFFECT." During the time Braking Action Advisories are in effect, Air Traffic Control (ATC) will issue the latest braking action report for the runway in use to each arriving and departing aircraft. Pilots should be prepared for deteriorating braking conditions and should request current runway condition information if not volunteered by controllers. Pilots should also be prepared to provide a descriptive runway condition report to controllers after landing.

**braking distance**

Total distance required to stop a motor vehicle from the time the driver recognizes the need to stop until the vehicle is standing still. Influencing factors include the speed of the vehicle, the weather, the road conditions, the vehicle's tires and condition of its brakes, etc. Sometimes referred to as *stopping distance*.

**branch**

In ventilation, a duct or pipe connecting an exhaust hood to a main or sub-main.

**branch circuit**

The circuit conductors between the final over-current device protecting the circuit and the outlet(s).

**branch duct entry**

The point in a ventilation system where a branch or secondary duct joins a main duct.

**branch of greater resistance**

The path from a hood or duct opening to the fan and exhaust stack in a ventilation system which causes the most pressure loss.

**branch railroad**

A lateral extension of a main line; a road connected with or issuing from a main line.

**branch sewer**

A sewer that receives wastewater from a small area and discharges into a main sewer serving more than one area.

**brass**

A copper alloy containing up to 40% zinc.

**brass-founders ague**

Metal fume fever that may occur in workers in brass foundries.

**brattice**

Partitions that are placed throughout underground mines to control the flow of ventilation. These are often made of heavy cloth such as canvas, or of plywood.

**Brayfield-Rothe Scale of Job Satisfaction**

A commercially available standardized questionnaire for surveying job satisfaction among employees.

**breach**

(1) The breaking or violating of a law, right, obligation, engagement, or duty, either by commission or omission. Exists where one party to a contract fails to carry out term, promise, or condition of the contract. (2) Bypass, avoid, or dismantle a safety or security mechanism.

**breach of contract**

(1) Failure, without legal excuse, to perform any promise which forms the whole or part of a contract. (2) Unequivocal, distinct, and absolute refusal to perform an agreement.

**breach of duty**

In a general sense, any violation or omission of a legal or moral duty. More particularly, the neglect or failure to fulfill, in a just and proper manner, the duties of an office or fiduciary employment.

**breach of warranty**

(1) In real property law and the law of insurance, the failure or falsehood of an affirmative promise or statement, or the nonperformance of an executory stipulation. (2) As used in the law of sales, breach of warranty, unlike fraud, does not involve guilty knowledge, and rests on contract. (3) Under the Uniform Commercial Code, consists of a violation of either an express or implied warranty relating to title, quality, content, or condition of goods sold for which an action in contract will lie.

**breadth**

Width; a straight-line horizontal measurement having only lateral extent, from one side of the body or a body segment to the other.

**break**

(1) *General-Structure Mechanics*. A fracture resulting in complete separation into parts. (2) *Hydrology*. A surface disturbance of the water similar to a boil, caused by an underwater obstruction. *See also* *boil*.

**break-bulk**

Packages of hazardous materials that are handled individually, palletized, or unitized for purposes of transportation as opposed to bulk and containerized freight.

**break-even analysis**

An quantitative technique used to determine the sales necessary to achieve the break-even point. *See also* *break-even point*.

**break-even chart**

A graphical representation of the relationships between income and costs, usually based on different levels of volume for production and sales.

**break-even point**

That economic level at which total operating costs equal total income, and the company neither makes a profit nor has a loss.

**break the unit**

To uncouple the tractor from the trailer.

**break time**

See *rest period*.

**break up tow**

To disassemble the tow either at the end of the voyage or inadvertently on a sandbar.

**breakbone fever**

See *dengue*.

**breakbulk cargo**

Packaged products that can be palletized into larger parcels and assembled together, for example, on pallet boards bound by wire, or gathered up in rope cargo slings as a means of lifting on and off a vessel.

**breakdown**

(1) A decomposition of some process or activity into its component parts. (2) The ceasing of operation of a system, subsystem, or component due to some fault or failure.

**breakdown bar**

A length of pipe used to increase the leverage in setting up ratchets when connecting tow rigging. Also called *cheater bar*.

**breakdown maintenance**

See *corrective maintenance*.

**breaking strength**

That stress level at which a material fails.

**breakout tank**

A tank used to 1) relieve surges in an oil or hazardous liquid pipeline system, or 2) receive and store oil or hazardous liquid transported by a pipeline for reinjection and continued transportation by pipeline.

**breakpoint**

That readily distinguishable point in time which represents a boundary between two task elements, at which one element is completed and the other is begun. Also referred to as *reading point* and *endpoint*.

**breakpoint chlorination**

Addition of chlorine until the chlorine demand has been satisfied. Further addition will result in a chlorine residual so that disinfection can be assured.

**breakthrough**

(1) *NIOSH*. The presence of 25% or more of a contaminant in the rear portion of a sorbent tube. (2) *Water Treatment*. That point in the granular media filter cycle when the filtrate

turbidity begins to increase because the filter bed is full and no longer able to retain solids.

**breakwater**

An offshore barrier, often connected to shore, that breaks the force of waves and provides shelter from wave action.

**breast**

(1) The anterior thorax, especially in the region of the nipple. (2) The human female mammary gland.

**breast line**

Any line that leads straight in or square. Keeps a barge from moving out from its mooring facilities.

**breastbone**

See *sternum*.

**breathalyzer test**

Test to determine content of alcohol in a person arrested for operating a motor vehicle while under the influence of liquor. The results of such test, if properly administered, are admissible evidence.

**breathe**

To alternately inhale and exhale air from the lungs.

**breathing air**

Air that equals or exceeds Grade D specifications for gaseous air in accordance with ANSI/CGA G-7.1-73, and that does not present a health hazard to anyone breathing the air.

**breathing zone**

(1). Usually the air within a 12 to 24 inch radius surrounding a person's head. (2) Area of a room in which occupants breathe as they stand, sit or lie down.

**breathing zone sample**

An air sample collected in the breathing area of a worker to assess exposure to an airborne contaminant.

**bremstrahlung**

*Radiation*. A German word meaning "braking radiation," it is the secondary x-radiation (ionizing photon radiation) that is produced when a beta particle is slowed down or stopped by a high-density surface.

**BRI**

Building-related illness.

**bricklayer's square scaffold**

A scaffold composed of framed wood squares which support a platform limited to light and medium duty.

**bridge**

A structure including supports erected over a depression or an obstruction, such as water, highway, or railway, and having a track or passageway for carrying traffic or other moving loads, and having an opening measured along the center of the roadway of more than 20 feet between undercopings of abutments or spring lines of arches, or extreme ends of openings for multiple boxes; it may also include multiple pipes, where the clear distance between openings is less than half of the smaller contiguous opening.

**bridge foundation bearing material**

The type of material supporting the substructure of a bridge. Code as follows: GW, well-graded gravel; GP, poorly graded gravel; GM, silty gravel; GC, clay gravel; SW, well-graded sand; SP, poorly graded sand; SM, silty sand; SC, clay sand; RK, bedrock; UK, unknown; O, other.

**bridge number**

The number of the installation, consisting of the full route number (including segment and spur) plus the milepost location of the bridge to the nearest one hundredth of a mile.

**bridge posted load restrictions**

Load restrictions posted at a bridge structure. Entry order: single axle, dual axle, load type 3, load type 3S2, load type 3-3, and Special.

**bridge posted speed restrictions**

A speed limit posted at a bridge structure, in miles per hour.

**bridge structure**

A two-character code for recording the type of bridge structure. Code as follows: SS, simple span; CS, continuous span; SC, combination simple and cantilever; CC, combination continuous and cantilever; O, other.

**bridge superstructure**

Those elements of the bridge structure which are above the uppermost deck.

**bridging encapsulant**

A material, generally in a liquid form, that is employed to seal the surface of an asbestos-

containing material or other product, to prevent the release of fibers.

**bridle line**

The wire cable used to connect a barge in trailing fashion behind the towboat.

**bright**

A highlighting technique in which one or more portions of a display appear brighter than the remainder.

**brightener**

Any colorless, fluorescent dye which causes washed clothing to appear brighter under certain lighting conditions by converting ultraviolet light into visible light, normally at the blue end of the spectrum. Also referred to as *whitener*, *whitening agent*, and *optical brightener*.

**brightness**

A subjective judgment of the relative amount of light projected or reflected from a surface or object, ranging from brilliant to dark. *See also luminance*.

**brightness contrast**

The subjective difference between the brightness of an object and the background against which that object is located. *See also luminance contrast*.

**brightness control**

A potentiometer or other adjustment device for varying the luminance on a display. Also known as *brilliance control*.

**brightness enhancement**

The use of a flashing light within a certain flashing frequency range (about 2-20 Hz) to make a light appear brighter than if the same average light intensity were used from a steady light.

**bril**

A subjective scale for judging brightness.

**brilliance**

*See brightness*.

**brilliance control**

*See brightness control*.

**brine**

Water saturated with, or containing a high concentration of, salts, usually in excess of 36,000 mg/L.

**brine concentrator**

A vertical tube falling film evaporator employing special scale control techniques to maximize concentration of dissolved solids.

**brine heater**

The heat input section of a multistage flash evaporator where feed water is heated to the process' top temperature.

**brine staging**

See *reject staging*.

**brinelled**

Defaced or distorted surfaces typically caused by shock of impact between surfaces.

**British Thermal Unit (BTU)**

The amount of energy required to raise the temperature of 1 pound of water 1 degree Fahrenheit (F) at or near 39.2 degrees F and 1 atmosphere of pressure. One British Thermal Unit (BTU) is about equal to the heat given off by a blue-tip match.

**brittle fracture**

(1) A type of failure mode in structural materials that usually occurs without prior plastic deformation and at extremely high speed. (2) A type of failure mode such that burst of the vessel is possible during cycling. Normally this mode of failure is a concern when cycling to the maximum expected operating pressure (MEOP) or when the vessel is under sustained load at MEOP. (3) A type of fracture that is characterized by a flat fracture surface with little or no shear lips (slant fracture surface) and at average stress levels below those of general yielding.

**Brl**

See *building restriction line*.

**broad-crested weir**

A weir having a substantial crest width in the direction parallel to the direction of water flowing over it.

**broadband**

Containing many frequencies.

**broadband noise**

Noise with components extending over a wide frequency range. See also *white noise*.

**broadcast**

(1) A message sent to all stations connected to a computer network. (2) Transmission of in-

formation for which an acknowledgment is not expected.

**broadcast application**

In pesticide application, the spreading of chemicals over an entire area.

**broke**

Paper waste generated prior to completion of the paper-making process.

**broken shift**

See *split shift*.

**broken train collision**

A collision in which a moving train breaks into parts and an impact occurs between these parts, or when a portion of the broken train collides with another consist.

**broker**

A person who arranges for transportation of loads for a percentage of the revenue from the load. See also *customs house broker* and *freight forwarder*.

**brokerage**

Freight forwarder/broker compensation as specified by ocean tariff.

**bromine**

(1) A chemical element, atomic number 35, atomic weight 79.909, symbol Br. (2) A halogen used as a water disinfectant in combination with chlorine and as a chlorine-bromide mixture.

**bronchial tubes**

Branches or subdivisions of the trachea (windpipe). A *bronchiole* (the narrowest of the tubes which carry air into and out of the lungs) is a branch of the *bronchus* which is a branch of the trachea. Also referred to simply as *bronchi*.

**bronchiectasis**

Chronic dilation of the bronchi with spasmodic coughing and production of phlegm.

**bronchioles**

See *bronchial tubes*.

**bronchitis**

An inflammation of the bronchi or bronchial tubes. It can be either acute or chronic; an acute case occasionally develops into a chronic one. If the inflammation reaches the bronchioles and the alveoli, the condition is bronchopneumonia.



**bronchogenic carcinoma**

A carcinoma of the lung.

**bronchopneumonia**

Term indicating inflammation of the lungs, usually beginning in the terminal bronchioles, followed by their becoming clogged.

**bronze**

A copper-tin alloy, or any other copper alloy that does not contain zinc or nickel as the principal alloying element.

**brow**

See *forehead and eyebrow*.

**brow ridges**

The bony ridges of the forehead that lie above the orbits of the eyes.

**brown asbestos**

See *amosite asbestos*.

**brown coal**

A common term for lignite.

**brown lung**

See *byssinosis*.

**Brownfield**

(1) A contaminated property, either abandoned or underutilized because the perceived cost of remediation exceeds the perceived value. Often located in urban and economically distressed areas. (2) Former industrial sites that, either because of actual or perceived contamination, lie idle or underutilized because of fear of hazardous waste liability attached to their ownership or operation.

**Brownfield Initiative**

An EPA program begun in 1985 to fund pilot projects with investors, businesses, and developers to redevelop selected Brownfield sites. The initiative eliminated 25,000 +/- sites from the National Priority List.

**Brownian motion**

Erratic movement of colloidal particles that results from the impact of molecules and ions dissolved in the solution.

**brownie**

*Automotive*. An auxiliary transmission.

**brucellosis**

An illness caused by the bacterium of the Genus *Brucella*. Symptoms include fever, chills, headache, muscle aches, malaise, weakness, loss of appetite and subsequent loss of weight.

Mortality is possible but rare. Contact with infectious materials such as animal blood is an important mode of infection for livestock growers, veterinarians, and processing plant workers. Intact skin is an effective barrier, but cuts and abrasions provide a direct route of exposure. Inhalation and ingestion are also potential routes of infection. See also *undulant fever*.

**Bruceton test method**

A statistical method for determining the all-fire and no-fire characteristics of an electro-explosive device using a small sample size, but with high reliability.

**bruise**

An injury characterized by capillary or venous hemorrhaging beneath an unbroken skin. See also *hematoma*.

**brush aerator**

Mechanical aeration device most frequently used in oxidation ditch wastewater treatment plants, consisting of a horizontal shaft with protruding paddles that are rapidly rotated at the water surface. Also called a *rotor*.

**brush out**

To clear out the brush or vegetation around a light or day mark so that the structure is visible to navigation in all necessary directions. An aid should be cleared or brushed out so as to be completely visible to navigation from the beginning of its use in a set of marks until it is no longer being used in that or another set of marks. See also *landscaping*.

**bruxism**

Grinding of the teeth.

**BRYNTRN**

A computer model for determining the effects of nucleons on target materials.

**BSC**

See *Boating Safety Circular*.

**BS&W**

Bottom sediments & water.

**BTPS conditions**

See *body temperature and pressure, saturated conditions*.

**BTS**

See *Bureau of Transportation Statistics*.

**BTU**

See *British Thermal Unit*.

**bubble**

(1) A system under which existing emissions sources can propose alternate means to comply with a set of emissions limitations. Under the bubble concept, sources can implement more than the required controls at one emission point where control costs are relatively low in return for a comparable relaxation of controls at a second emission point where costs are higher. (2) A trapped volume of air or other gas(es) within a more viscous fluid or solid.

**bubble meter**

A burette, or other similar volumetric device, that can be used with a soap solution to form a bubble for calibrating a sampling device, such as a pump, by timing the period it takes for the bubble to traverse a specific volume and using this data to calculate its flow rate. This method is considered a primary calibration method. Also referred to as a *soap-film* or *soap-bubble flow meter*.

**bubble policy**

See *emissions trading*.

**bubble tube**

A simple device used to calibrate air-sampling pumps.

**bubbler**

A device used to collect air contaminants by bubbling sampled air through a liquid medium (e.g., absorbent) contained in the bubbler. The sampling tube of the bubbler typically has a glass frit at the end which is immersed in the collecting solution or sampling medium.

**bubbler system**

Common terminology for a pneumatic-type differential level controller.

**bubonic plague**

An acute infectious disease usually transmitted from infected animals to humans by the bite of a rat flea.

**buchner funnel**

A laboratory funnel with a perforated bottom that utilizes a disposable filter paper to evaluate wastewater and sludge dehydration.

**bucket elevator**

A conveying device consisting of a head and foot assembly that supports and drives an

endless chain or belt to which buckets are attached.

**buddy-breathing device**

An accessory to self-contained breathing apparatus which permits a second person to share the same air supply as that of the wearer of the apparatus.

**buddy system**

A system organizing employees into work groups in such a manner that each employee of a work group is designated to be observed by another person in the work group.

**Buerger's disease**

A disease affecting the medium-sized blood vessels, particularly the arteries of the legs, which can cause severe pain and in serious cases, lead to gangrene. Also called *thromboangitis obliterans*, a term that refers to the clotting, pain, and inflammation occurring in this disease and to the fact that it can obliterate, or destroy, blood vessels. The cause of this violent reaction has been thought to be excessive use of tobacco over a long period of time. The number of cases has diminished strikingly in recent years. The intense pain that is a symptom of the disease is caused by the formation of blood clots, or thrombosis, in the lining of the arterial blood vessels. When the clots grow larger, the blood slows and may stop entirely. Since every part of the body depends on the continuous flow of blood, affected areas such as fingers and toes, soon begin to atrophy or develop ulcers. If the causes of the disease are not completely arrested, amputation may be necessary.

**buffer**

(1) A substance that stabilizes the pH value of solutions. (2) A region separating one area from another for safety, habitability, or other reasons. (3) A temporary computer storage location in which data may be kept while awaiting transfer to another, more permanent location.

**buffer strips**

Strips of grass or other erosion-resisting vegetation between or below cultivated strips or fields.

**buffering capacity**

The capacity of a solution to resist a change in composition, especially changes in pH.

**bug it**

*Transit.* To carry freight from the front to the back of a truck.

**builder**

(1) Any chemical used in the laundry process which acts to soften water for improved detergent activity. (2) One whose occupation is the building or erection of structures, the controlling and directing of construction, or the planning, constructing, remodeling and adapting to particular uses buildings and other structures.

**building block**

One of a fixed group of elements or modules which may be joined to form a system or complete some activity.

**building code**

(1) A set of regulations that provides standards to which structures must be built. These may be issued by local, county, state, regional, or national agencies. (2) Laws, ordinances, or government regulations concerning fitness for habitation setting forth standards and requirements for the construction, maintenance, operation, occupancy, uses or appearance of buildings, premises, and dwelling units. *See also code.*

**building envelope**

Elements of the building, including all external building materials, windows, and walls, that enclose the internal space.

**building-related illness**

A diagnosable illness whose symptoms can be identified and whose cause can be directly attributed to airborne building pollutants (e.g., *Legionnaire's Disease, hypersensitivity pneumonitis*).

**building restriction line (Brl)**

A line which identifies suitable building area locations on airports.

**Built-in Test (BIT)**

A circuit or other equipment located within a system which automatically or on direction by an operator verifies system function.

**Built-in Test Equipment (BITE)**

That circuitry or other hardware incorporated into a system for monitoring that system's function and analyzing faults when they occur.

**bulb**

The primary source of light in an electrically powered lamp.

**bulk arrival**

The arrival of several customers or users at a location at one time or as part of a single event.

**bulk cargo**

(1) Cargo not packaged or broken into smaller units. Bulk cargo is either dry (grain) or liquid (petroleum) and cannot be counted. (2) The tonnes of bulk cargo assessed at the Bulk rate of tolls as defined in the St. Lawrence Seaway Tariff of Tolls. (3) Cargo that is unbound as loaded and carried aboard ship; it is without mark or count, in a loose unpackaged form, and has homogeneous characteristics.

**bulk cargo spout**

A spout, which may or may not be telescopic and may or may not have removable sections, but is suspended over the vessel from some overhead structure by wire rope or other means. Such a spout is often used with a thrower or trimming machine. A grain loading spout is an example of spouts covered by this definition.

**bulk cargo sucker**

A pneumatic conveyor which utilizes a spout-like device, which may be adjustable vertically and/or laterally, and which is suspended over a vessel from some overhead structure by wire rope or other means. An example of an installation of this nature is the grain sucker used to discharge grain from barges.

**bulk carriers**

All vessels designed to carry bulk cargo such as grain, fertilizers, ore, and oil.

**bulk density**

The density/volume ratio for a solid including the voids contained in the bulk material.

**bulk materials**

Any powdery, granular, or lumpy substance in loose form.

**bulk packaging**

A packaging, other than a vessel or a barge, including a transport vehicle or freight container, in which hazardous materials are loaded with no intermediate form of containment and which has: 1) a maximum capacity greater than 450 L (119 gallons) as a recepta-

cle for a liquid; 2) a maximum net mass greater than 400 kg (882 pounds) and a maximum capacity greater than 450 L (119 gallons) as a receptacle for a solid; or 3) a water capacity greater than 454 kg (1000 pounds) as a receptacle for a gas as defined in 49 CFR 173.115.

**bulk sample**

(1) As related to asbestos, a small portion of suspect building materials that are collected and sent to a laboratory for analysis by polarized light microscopy coupled with dispersion staining, or by electron microscopy for verification.

**bulk terminal**

(1) A facility used primarily for the storage and/or marketing of petroleum products, which has a total bulk storage capacity of 50,000 barrels or more and/or receives petroleum products by tanker, barge, or pipeline. (2) A purpose-designed berth or mooring for handling liquid or dry commodities, in unpackaged bulk form, such as oil, grain, ore, and coal. Bulk terminals typically are installed with specialized cargo-handling equipment such as pipelines, conveyors, pneumatic evacuators, cranes with clamshell grabs, and rail lines to accommodate cargo-handling operations with ships or barges. Commodity-specific storage facilities such as grain silos, petroleum storage tanks, and coal stock yards are also located at these terminals.

**bulkhead**

(1) A partition of wood, rock, concrete, or steel used for protection from water, or to segregate sections of tanks or vessels. (2) A partition separating one part of a ship, freight car, aircraft, or truck from another part.

**bulking sludge**

A poorly settling activated sludge that results from the predominance of filamentous organisms.

**bulky waste**

Large items of solid waste such as household appliances, furniture, large auto parts, trees, branches, stumps, or other oversize wastes whose large size precludes or complicates their handling by normal solid wastes collection, processing, or disposal methods.

**bull hauler**

One who hauls livestock.

**bullae**

Bladder or sac containing liquid, such as occurs when lungs become emphysematous.

**bulletin board**

(1) *General*. A posting board usually located in a common area of access used to post information of general or specific interest. (2) *Marine Safety*. A board located at each dam upon which is displayed information concerning the navigability of the dam, such as indicating when movable dams are down and open river conditions exist. Also located elsewhere such as at gauges to publish gauge readings and river level trend.

**bulling**

The horizontal dragging of cargo across a surface with none of the weight of the cargo supported by the fall.

**bullnose**

A slanted riverward end of the intermediate lock wall.

**bump**

(1) *General*. a) A rise (or dip) or slight elevation (or depression) above (or below) normal grade. b) A minor (negligible) collision or contact between two or more bodies. (2) *Marine Navigation*. Usually used in the phrase "watch the bump," a term used on board tows when one or more barges are likely to make contact. May also mean a momentary grounding, usually due to excess speed in shallow water.

**bumpers**

(1) Fenders. (2) Pads made out of Styrofoam, old ropes, old tires, or similar material, which are hung over the side of a water vessel to prevent damage to the vessel when berthing or locking through dams.

**bundle**

*Asbestos (EPA)*. A structure composed of three or more fibers in a parallel arrangement with each fiber closer than one fiber diameter.

**bunker**

A storage tank.

**bunker C/Number 6 fuel oil**

A high viscosity oil used mostly by ships, industry, and large-scale heating installations. This heavy fuel requires preheating in the storage tank to permit pumping and additional preheating to permit atomizing at the burners.

**bunkering fuels**

Fuels stored in ship bunkers.

**bunkers**

Fuels supplied to ships and aircraft in international transportation, irrespective of the flag of the carrier, consisting primarily of residual, distillate, and jet fuel oils.

**buoy**

A float moored or anchored in water.

**buoy line**

A line formed by two or more buoys marking a contour edge of a channel.

**buoy range markers**

Painted stakes set up on shore so placed as to form a range through the exact location of a buoy. Used only on the Tennessee River to mark buoys in dredged cuts.

**buoyancy**

The tendency of a body to rise or float in a liquid.

**burden**

Capacity for carrying cargo. Something that is carried. Something oppressive or worrisome.

**burden of persuasion**

The onus on the party with the burden of proof to convince the trier of fact of all elements of his/her case.

**burden of producing evidence**

The obligation of a party to introduce evidence sufficient to avoid a ruling against him/her on the issue.

**burden of proof**

In the law of evidence, the necessity or duty of affirmatively proving a fact or facts in dispute on an issue raised between the parties in a cause. The obligation of a party to establish by evidence a requisite degree of belief concerning a fact in the mind of the trier of fact or the court.

**bureau**

(1) An office for the transaction of business. (2) A name given to the several departments of the executive or administrative branch of government, or their divisions. (3) A specialized administrative unit. (4) Business establishment for exchanging information, making contacts, coordinating activities, etc.

**Bureau of Land Management**

Established July 16, 1946 by the consolidation of the General Land Office (created in 1812) and the Grazing Service (formed in 1934). The Bureau manages the national resource lands (some 450 million acres) and their resources. It also administers the mineral resources connected with acquired lands and the submerged lands of the Outer Continental Shelf (OCS). It is within the U.S. Department of the Interior.

**Bureau of Mines (BOM)**

A research and fact-finding agency in the U.S. Department of the Interior with the goal of stimulating private industry to produce the country's mineral needs in ways that protect workers and the public interest.

**Bureau of Transportation Statistics (BTS)**

The Bureau was organized pursuant to section 6006 of the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 (49 U.S.C. 111), and was formally established by the Secretary of Transportation on December 16, 1992. BTS has an intermodal transportation focus whose missions are to compile, analyze, and make accessible information on the nation's transportation systems; to collect information on intermodal transportation and other areas; and to enhance the quality and effectiveness of DOT's statistical programs through research, the development of guidelines, and the promotion of improvements in data acquisition and use. The programs of BTS are organized in six functional areas and are mandated by ISTEA to: 1) compile, analyze, and publish statistics; 2) develop a long-term data collection program; 3) develop guidelines to improve the credibility and effectiveness of the Department's statistics; 4) represent transportation interests in the statistical community; 5) make statistics accessible and understandable; and 6) identify data needs.

**BuRec**

U.S. Bureau of Reclamation.

**burette**

A glass tube with fine gradations and bottom stopcock used to accurately dispense fluids.

**burial ground**

A disposal site for radioactive waste materials that uses earth or water as a shield. Also referred to as *graveyard*.

**burn**

Injury caused by contact with dry heat (fire), moist heat (steam or liquid), chemicals, electricity, lightning, or ultraviolet rays of the sun. Burns are classified according to degree.

- A *first degree* burn involves a reddening of the skin area;
- A *second degree* burn causes the skin to blister;
- A *third degree* burn is the most serious, involving damage to the deeper layers of the skin. In some cases, the growth cells of the tissues in the affected area may be destroyed.

**burn-in test**

A period of time in which a completed system or set of subsystems is observed under expected operating or more extreme conditions to determine if any of the components will fail prematurely. Synonymous with *debug*.

**burning rate**

The rate at which solid waste is incinerated or heat is released during incineration.

**burnishing**

A surface-finishing process in which surface irregularities are displaced rather than removed.

**burr**

A ragged edge or sharp point on a surface, possibly as a result of some faulty machining process or as a natural characteristic of the material.

**bursa**

A fluid-filled, sac-like structure having a slippery surface and located at joints or other tissues to reduce friction in movement.

**bursitis**

An inflammation of the joints of the body, occasionally with calcium deposit development. *See also* [cumulative trauma disorder](#).

**burst**

A rapid decrease in pressure within a container of specified volume as it ruptures under pressure and the contents spread rapidly to the external environment.

**burst factor**

A multiplying factor applied to the maximum expected operating pressure (MEOP) to ob-

tain the design burst pressure. Synonymous with *ultimate pressure factor*.

**burst lung**

*See* [pulmonary hyperinflation syndrome](#).

**bus**

(1) Any of several types of self-propelled vehicles, generally rubber-tired, intended for use on city streets, highways, and busways, including but not limited to minibuses, forty-and thirty-foot buses, articulated buses, double-deck buses, and electrically powered trolley buses, used by public entities to provide designated public transportation service and by private entities to provide transportation service including, but not limited to, specified public transportation services. Self-propelled, rubber-tired vehicles designed to look like antique or vintage trolleys are considered buses. (2) Any motor vehicle designed, constructed, and or used for the transportation of passengers, including taxicabs. (3) A vehicle designed to carry more than 15 passengers, including the driver. (4) Large motor vehicles used to carry more than ten passengers, including school buses, intercity buses, and transit buses. (5) Includes intercity buses, mass transit systems, and shuttle buses that are available to the general public. Also includes Dial-A-Bus and Senior Citizen buses that are available to the public. *See also* [automobile](#), [minivan](#), [motor vehicle](#), and [vehicle](#).

**bus charter service**

(Except Local) Establishments primarily engaged in furnishing passenger transportation charter service where such operations are principally outside a single municipality, outside one group of contiguous municipalities, or outside a single municipality and its suburban areas.

**bus lane**

A street or highway lane intended primarily for buses, either all day or during specified periods, but sometimes also used by carpools meeting requirements set out in traffic laws.

**bushing**

(1) A short threaded tube that screws into a pipe fitting to reduce its size. (2) The bearing surface for pin rotation when a chain revolves around a sprocket.



**business**

(1) Employment, occupation, profession, or commercial activity engaged in for gain or livelihood. (2) Activity or enterprise for gain, benefit, advantage, or livelihood. (3) An enterprise in which a person engaged shows willingness to invest time and capital on future outcome.

**business district**

The territory contiguous to and including a highway when within any 600 feet along such highway there are buildings in use for business or industrial purposes, including but not limited to hotels, banks, or office buildings which occupy at least 300 feet of frontage on one side or 300 feet collectively on both sides of the highway.

**business flying**

The use of aircraft by pilots (not receiving direct salary or compensation for piloting) in connection with their occupation or in the furtherance of a private business.

**business insurance**

A type of insurance which protects a business on the disability or death of a key employee. *See also insurance.*

**business interruption insurance**

A type of insurance which protects a business from losses due to an inability to operate because of fire or other hazards. *See also insurance.*

**business tort**

A noncontractual breach of a legal duty by a business directly resulting in damages or injury to another.

**business transportation**

Use of an aircraft not for compensation or hire by individuals for the purpose of transportation required by businesses in which they are engaged.

**bust depth**

The horizontal linear distance from the most posterior protrusion at the bra tip level of an individual's back to the bust point. Measured with the individual standing erect; for females only.

**bust point**

The most anterior external protrusion of the bra pocket (for females only).

**bust point - bust point breadth**

The horizontal distance between bust points. Measured with the individual standing erect; for females only.

**bust point height**

The vertical distance from the floor or other reference surface to the bust point. Measured with the individual standing erect and the weight distributed evenly on both feet; for females only. Also known as *chest height*.

**busway**

(1) Exclusive freeway lane for buses and carpools. (2) A roadway reserved for buses only. It may be a grade-separated or controlled access roadway.

**but for rule**

*See cause in fact.*

**butterfly valve**

A valve equipped with a stem-operated disk that is rotated parallel to the liquid flow when opened and perpendicular to the flow when closed.

**buttock**

The mass of fleshy tissue posterior to the hip, consisting largely of the gluteus maximus and other muscles.

**buttock circumference**

The surface distance around the body without tissue compression at the level of the maximum posterior protuberance of the buttocks. Measured with the individual standing erect and the weight balanced evenly on both feet. Also referred to as *hip circumference, standing*.

**buttock circumference, sitting**

The surface distance around the buttocks and diagonally across the lap. Measured with the individual sitting erect. Also referred to as *hip circumference, sitting*.

**buttock depth**

The horizontal linear distance from the maximum posterior protrusion of the buttocks to the most anterior portion of the torso at that level. Measured with the individual standing erect with the hip and thigh muscles relaxed.

**buttock - heel length**

*See buttock - leg length.*

**buttock height**

The vertical distance from the floor to the maximum posterior protrusion of the buttock.

Measured with the individual standing erect and the weight balanced evenly on both feet.

**buttock - knee length**

The horizontal distance from the rearmost point of the buttocks to the front of the kneecaps. Measured with the individual sitting erect, the knees flexed 90°, feet flat on the floor, and the upper leg parallel to the floor.

**buttock - leg length**

The horizontal distance from the wall or the most posterior point of the buttocks to the underside of the heel. Measured with the individual sitting erect on the floor or other flat surface (possibly against a wall but with no tissue compression), the knee fully extended, and the long longitudinal axis of the foot perpendicular to the leg. Also referred to as *buttock - heel length*.

**buttock - popliteal length**

The horizontal distance from the rearmost surface of the buttock to the back of the lower leg. Measured with the individual sitting erect, knees flexed 90°, the feet flat on the floor, and the upper leg parallel to the floor.

**buttock protrusion**

The point of maximum posterior protrusion of the buttock.

**button**

(1) A fastening device, usually used in garments. (2) A heavy steel casting found mostly on lock walls, designed to hold the eye of a line or wire. It is also used as deck fittings on towboats and on barges. (3) A short mushroom-shaped bit or a short timberhead.

**button her up**

Tie down the load on a truck or trailer.

**Buys-Ballot's Law**

Describes the relationship between the wind direction and the pressure distribution. In the Northern Hemisphere, if you stand with your back to the wind, lower pressure will be to your left. In the Southern Hemisphere, it is reversed.

**BWI**

British drinking Water Inspectorate.

**bylaws**

Regulations, ordinances, rules, or laws adopted by an association or corporation or the like for its internal governance. Bylaws define the rights and obligations of various officers, persons, or groups within the corporate structure

and provide rules for routine matters such as calling meetings and the like.

**bypass**

(1) A channel or pipe arranged to divert flow around a tank, treatment process, or control device. (2) A surgical procedure where a critical vessel that has been blocked (due to plaque) or otherwise damaged and is not able to properly function, is clamped and re-routed or replaced by an vessel segment obtained from another part of the body (e.g., femoral artery) to ensure proper and continuous flow of blood to a critical area (such as the heart).

**bypass fume hood**

A laboratory fume hood constructed such that, as the sash is closed, air bypasses the hood face via an opening that is typically located above the sash, thereby providing a reasonably constant velocity of air entering the hood face.

**byproduct**

(1) Under the Federal Geothermal Energy Research, Development, and Demonstration Act of 1974: Any mineral or minerals which are found in solution or in association with geothermal resources and which have a value of less than 75 percent of the value of the geothermal steam and associated geothermal resources or are not, because of quantity, quality, or technical difficulties in extraction and production, of sufficient value to warrant extraction and production by themselves. (2) A material or substance that is not a primary product of a process and is not separately produced.

**byproduct material**

Under the Federal Atomic Energy Act of 1954: Any radioactive material (except special nuclear material) produced in or made radioactive by exposure to the radiation incident to the process of producing or utilizing special nuclear material. Also the tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content.

**byssinosis**

A disease of the lungs caused by chronic exposure to cotton and/or linen fibers and dusts.

**byte**

A group of bits which may be treated as a single unit in a digital computer. The number depends on the type of hardware, but there are typically 8 bits to a byte.

# C

## **C-scale**

A sound weighting system having flat response characteristics for high sound pressure levels up to about 8 kHz.

## **C-shift**

See *third shift*.

## **C-weighted sound level (dBC)**

The sound level as determined on the C-scale of a sound level meter or other noise survey meter with the weighting network. See also *C-scale*.

## **C&W**

See *caution and warning*.

## **CA**

See *cab-to-axle dimension*.

## **CAA**

See *Clean Air Act*.

## **CAAA**

See *Clean Air Act Amendments*.

## **CAB**

See *Civil Aeronautics Board*.

## **cab**

(1) That portion of the superstructure designed to be occupied by the crew operating a locomotive. (2) The compartment of a locomotive from which the propelling power and power brakes of the train are manually controlled. (3) Portion of truck where the driver sits; tractor. The passenger compartment of a vehicle.

## **cab beside engine**

The cab is located to left or right side of the engine.

## **cab forward of the engine**

The engine is directly behind the cab.

## **cab over**

A vehicle with a substantial part of its engine located under the cab. Also known as *snub-nose*.

## **cab-over-engine (COE)**

A truck or truck-tractor, having all, or the front portion, of the engine under the cab.

## **cab-over-engine (COE) high profile**

A COE having the door sill step above the height of the front tires.

## **cab signal**

*Rail Transportation.* A signal located in the engineman's compartment or cab, indicating a condition affecting the movement of a train and used in conjunction with interlocking signals and in conjunction with or in lieu of block signals.

## **cab-to-axle dimension (CA)**

The distance from the back of a truck cab to the centerline of the rear axle. For trucks with tandem rear axles, the CA dimension is given midway between the two rear axles.

## **cabin**

The occupied portion of the interior of a passage vehicle.

## **cabin deck**

The second deck on most river steamboats. It was lined with staterooms surrounding the main cabin. It was also called the *boiler deck* even though the boilers were on the cargo deck below.

## **cabin motorboat**

Motorboats with a cabin which can be completely closed by means of doors or hatches. Large motorboats with cabins, even though referred to as yachts, are considered to be cabin motorboats.

## **cabin pressure**

The atmospheric pressure within a cabin.

## **cabin temperature**

The dry-bulb temperature within a cabin.

## **cabinet**

(1) An independent structure containing drawers and/or shelves. (2) An enclosure designed either for surface or flush mounting, and provided with a frame, mat, or trim in which a swinging door or doors are or may be hung.

## **cable car**

An electric railway operating in mixed street traffic with unpowered, individually controlled transit vehicles propelled by moving cables located below the street surface and powered by engines or motors at a central location not on board the vehicle.

## **cable cars**

Streetcar type of passenger vehicles operating by means of an attachment to a moving cable located below the street surface and powered

by engines or motors at a central location not on board the vehicles.

**cable tray system**

A unit or assembly of units or sections, and associated fittings, made of metal or other noncombustible materials forming a rigid structural system used to support cables. Cable tray systems include ladders, troughs, channels, solid bottom trays, and other similar structures.

**cablebus**

An approved assembly of insulated conductors with fittings and conductor termination in a completely enclosed, ventilated, protective metal housing.

**cableway**

A conveyor system in which carrier units run on wire cables strung between supports.

**caboose**

A car in a freight train intended to provide transportation for crew members.

**cabotage**

A law which requires coastal and intercoastal traffic to be carried by vessels belonging to the country owning the coast.

**caesthesia**

Disordered sensibility.

**cache**

*Computing.* A pool of memory set aside to store items from a slower device, such as a hard disk. By using a cache, the computer can retrieve often-used information much faster than if it were required to find it on the hard disk each time.

**cachexia**

A state of malnutrition, emaciation, and debility, usually in the course of a chronic illness.

**cackle crate**

Truck that hauls live poultry.

**CAD**

Computer-aided design.

**cadaver**

The body of a deceased human.

**cadmium**

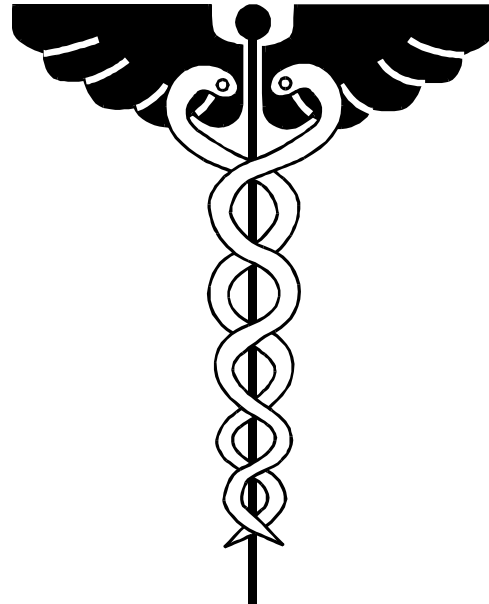
A chemical element, atomic number 48, atomic weight 112.40, symbol Cd.

**cadmium sulfide**

A light yellow or possibly orange powder used, in a 1 per cent suspension, in treatment of seborrheic dermatitis of the scalp (dandruff).

**caduceus**

The wand of Hermes or Mercury; used as a symbol of the medical profession and as the emblem of the Medical Corps of the U.S. Army.



*Caduceus*

**CAE**

See *cost of accidents per employee*.

**CAFÉ**

See *corporate average fuel economy standard*. See also *fuel economy standard*.

**cafeteria benefit plan**

See *cafeteria plan*.

**cafeteria plan**

A means of handling fringe benefits in which the employer allocates a certain amount of money to each employee for such benefits, and the employee is able to select the distribution of those benefits to his/her own best advantage. Also referred to as *cafeteria benefit plan*.

**caffeine**

A white powder, slightly soluble in water and having a bitter taste, found in coffee and tea.

It is an alkaloid and acts as a central nervous system stimulant and a mild diuretic.

**cage**

An enclosure that is fastened to the side rails of a fixed ladder or to the ladder's supporting structure to encircle the climbing space of the ladder for the safety of the person who must climb the ladder. May also be referred to as a *basket guard* or *cage guard*.

**cage guard**

See *cage*.

**CAI**

See *computer-aided instruction*.

**caisson**

Watertight structure used for underwater work.

**caisson disease**

Decompression sickness, a condition suffered by underwater workers and caused by a too rapid decrease in atmospheric pressure. The condition is named after the pressurized, watertight compartments (caissons) in which underwater construction personnel work. The main symptoms are dizziness, staggering, muscle spasms, difficulty in breathing, abdominal pain, and partial paralysis. Caisson disease is a form of the *bends*.

**cake**

Dehydrated sludge with a solids concentration sufficient to allow handling as a solid material.

**cake filtration**

Filtration classification for filters where solids are removed on the entering face of the granular media.

**cal**

See *calorie*.

**Cal**

See *Calorie*.

**CAL-3D crash victim simulator (CAL-3D-CVS)**

A computer modeling program for simulating the biomechanical responses of an individual in a vehicular crash.

**calamine**

A mixture of zinc and ferric oxides, used topically in lotions and ointments.

**calamity**

A state of extreme distress or misfortune, produced by some adverse circumstance or event. Any great misfortune or cause of loss or misery, often caused by natural forces (e.g., hurricane, flood, or the like). See also *act of God*.

**calandria**

The heating element in an evaporator consisting of vertical tubes that act as the heating surface.

**calcaneus**

The heel bone.

**calcareous**

Composed of or containing calcium compounds, particularly calcium carbonate.

**calcinosis**

A lung disease due to the inhalation of marble dusts.

**calcification**

The deposit of calcium salts in a tissue. The normal absorption of calcium is facilitated by parathyroid hormone and by vitamin D. When there are increased amounts of parathyroid hormone in the blood (as in hyperparathyroidism), there is deposition of calcium in the alveoli of the lungs, the renal tubules, the thyroid gland, the gastric mucosa, and the arterial walls. Normally calcium is deposited in the bone matrix to ensure stability and strength of the bone. In osteomalacia, there is decalcification of bone because of a failure of calcium and phosphorus to be deposited in the bone matrix.

**calcify**

To become stone-like or chalky due to deposition of calcium salts.

**calciner**

A device in which the moisture and organic matter in phosphate rock is reduced in a combustion chamber.

**calcining**

Exposure of an inorganic compound to a high temperature to alter its form and drive off a substance that was originally part of the compound.

**calciokinesis**

Mobilization of calcium stored in the body.

**calcium**

A chemical element, atomic number 20, atomic weight 40.08, symbol Ca. Calcium is the most abundant mineral in the body. In combination with phosphorus, it forms calcium phosphate, the dense, hard material of the bones and teeth.

**calcium carbonate**

A white, chalky substance that is the principal hardness- and scale-causing compound in water. Chemical formula is  $\text{CaCO}_3$ .

**calcium carbonate equivalent (mg/L as  $\text{CaCO}_3$ )**

A convenient unit of exchange for expressing all ions in water by comparing them to calcium carbonate, which has a molecular weight of 100 and an equivalent weight of 50.

**calcium hypochlorite**

A chlorine compound frequently used as a water or wastewater disinfectant. The chemical formula is  $\text{Ca}(\text{OCl})$ .

**calcium sulfate**

A white solid known as the mineral "anhydrite" with the chemical formula  $\text{CaSO}_4$  and gypsum, which has the chemical formula  $\text{CaSO}_4 \cdot \text{H}_2\text{O}$ .

**calculated**

Adopted by calculation, forethought, or contrivance to accomplish a purpose; likely to produce a certain effect.

**calculated landing time**

*Aviation.* A term that may be used in place of tentative or actual calculated landing time, whichever applies.

**Caldwell regimen**

A procedure for static strength assessment, involving providing to the subject the details of the experiment and the necessary instructions, noting the posture and muscles involved, and having the subject maintain a four-second hold on the measuring device.

**calendar year**

The period of time between January 1 and December 31 of any given year.

**calender**

A machine which passes some pliable material between rollers or plates to make a relatively smooth, continuous or long sheet. Normally, this machine presents a clear nip point safety hazard.

**calf**

The fleshy part of the posterior lower leg, consisting largely of the gastrocnemius muscle.

**calf circumference**

The surface distance around the lower leg in a horizontal plane at the vertical level which gives the greatest value. Measured with the individual standing erect, with weight equally distributed on both feet.

**calf circumference, recumbent**

The calf circumference of a reclining individual. Measured with the individual supine, the knee and hip both flexed  $90^\circ$ , and the longitudinal axis of the foot perpendicular to that of the leg.

**calf depth**

The linear horizontal distance from the posterior surface to the anterior surface on the lower leg at the level of the calf circumference. Measured with the individual standing erect and weight equally distributed on both feet.

**calf length**

The linear distance parallel to the longitudinal axis of the lower leg between the knee joint level and the medial malleolus.

**calibrate**

*Instrument.* The adjustment or standardization of a measuring instrument. To adjust the span or gain of an instrument so that it indicates the actual concentration of a specific substance or mixture which is present at the sensor.

**calibrated airspeed**

The indicated airspeed of an aircraft, corrected for position and instrument error. Calibrated airspeed is equal to true airspeed in standard atmosphere at sea level.

**calibration**

Determination of variation from standard, or accuracy, of measuring instruments to ascertain necessary correction factors.

**calibration gas**

A gas of accurately known concentration which is used as a comparative standard in determining instrument performance and to adjust the instrument to indicate the true concentration.



**California current**

The ocean current that flows southward along the west coast of the United States from about Washington to Baja California.

**California norther**

A strong, dry, northerly wind that blows in late spring, summer, and early fall in northern and central California. Its warmth and dryness are due to downslope compression heating.

**caliper**

A device for obtaining accurate measurements of relatively short linear measures.

**calisthenics**

A form of exercise performed to improve strength, endurance, and/or grace.

**call for release**

Wherein the overlying Air Route Traffic Control Center (ARTCC) requires a terminal facility to initiate verbal coordination to secure Air Route Traffic Control Center (ARTCC) approval for release of a departure into the en route environment.

**call out**

A vocal method for presenting information to be heard by an individual. *See also read-out.*

**call up**

Initial voice contact between a facility and an aircraft, using the identification of the unit being called and the unit initiating the call.

**calorie (cal)**

The amount of heat required to raise the temperature of one gram of water by one degree Celsius. The calorie used in nutrition and metabolism is spelled with a capital "c" as Calorie. *See also Calorie.*

**Calorie (Cal)**

The unit for heat (energy) production in body nutrition and metabolism; equal to 1 Kcal. Also may be referred to as *kilocalorie* or *large calorie*. *See also calorie.*

**CALSPAN**

A computer modeling program for simulating crash victim dynamics.

**calumniator**

In the civil law, one who accused another of a crime without cause; one who brought a false accusation.

**calumny**

Defamation; slander; false accusation of a crime or offense.

**CAM**

*See continuous air monitor.*

**camel back body**

Truck body with floor curving downward at the rear.

**camera ready**

The detailed preparation of data (e.g., writing, drawings, figures, photographs, etc.) in a manner and format that is ready for immediate reproduction in printed form. This means that the materials to be printed must be absolutely error-free since there will be no opportunity for corrective action once they are printed.

**camera study**

*See memomotion study.*

**CAMP**

Continuous air monitoring program.

**camp car**

Any on-track vehicle, including outfit, camp, or bunk cars or modular homes mounted on flat cars used to house rail employees. It does not include wreck trains.

**campaign**

*Maritime.* A Defect/Noncompliance Campaign Program carried out by the manufacturer and initiated under 46 U.S.C. 4310. Starts as a case. A campaign may involve only one boat.

**Canadian Minimum Navigation Performance Specification Airspace**

That portion of Canadian domestic airspace within which Minimum Performance Specifications Airspace (MNPSA) separation may be applied.

**canal caps**

A type of personal hearing protection which blocks noise from entering the external ear canal by placing a tight fitting cap over them.

**canal/ditch**

Artificial waterway used for navigation, drainage, or irrigation of land. An artificial open waterway constructed to transport water, to irrigate or drain land, to connect two or more bodies of water, or to serve as a waterway for watercraft. *See also aqueduct.*

**canard**

The forward wing of a canard configuration that may be a fixed, movable, or variable geometry surface, with or without control surfaces.

**canard configuration**

A configuration in which the span of the forward wing is substantially less than that of the main wing.

**cancellation**

(1) *General*. To destroy the force, effectiveness, or validity of. To annul, abrogate, or terminate. Words of revocation written across an instrument. (2) *FIFRA*. Under the Federal Insecticide, Fungicide, and Rodenticide Act: The authorization to cancel a pesticide registration if unreasonable adverse effects to the environment and public health develop when a product is used according to widespread and commonly recognized practice, or if its labeling or other material required to be submitted does not comply with FIFRA provisions.

**cancellation clause**

A provision in a contract or lease which permits the parties to cancel or discharge their obligations thereunder.

**cancellation of insurance**

The withdrawal of insurance coverage by either the insurer or the insured.

**cancellation test**

A clerical aptitude test for speed and accuracy in crossing letters or numbers in a sequence.

**cancellous bone**

That interior portion of some bones which contains a criss-crossed matrix of calcified bone tissue with the remaining volume filled with marrow. Also called *spongy bone*.

**cancer**

A malignant neoplasm. Cancer is a neoplastic disease in which there is new growth of abnormal cells. Normally, the cells that compose body tissues grow in response to a normal stimulus. Worn-out body cells are regularly replaced by new cell growth which stops when the cells are replaced; new cells form to repair tissue damage and stop forming when healing is complete. Why they stop is unknown, but clearly the body in its normal processes regulates cell growth. In cancer,

cell growth is unregulated. The cells continue to reproduce until they form a mass of tissue known as a tumor. Not all tumors are malignant; those which are non-cancerous are referred to as benign tumors. *Benign* tumors vary in size, and may grow so large that they obstruct organs or cause ulceration and bleeding. They are encapsulated, do not metastasize, and usually can be removed by surgery without difficulty. *Malignant* tumors grow in a disorganized fashion, interrupting body functions and robbing normal cells of their food and blood supply. The malignant cells may spread to other parts of the body by a) direct extension into adjacent tissue, b) permeation along lymphatic vessels, c) traveling in the lymph stream to the lymph nodes, d) entering the blood circulation, and/or e) invasion of a body cavity by diffusion.

**cancer potency factor**

See *cancer slope factor*.

**cancer slope factors (CSF)**

Used in assessing toxicity in the risk assessment process. These factors are estimates of risk of developing cancer per unit of exposure and have units of 1/(mg/kg/d).

**candela (cd)**

A unit of luminous intensity equivalent to one lumen per square foot. Formerly called the *candle*. It is equal to the intensity of 555 nm ( $5.40 \times 10^{14}$  Hz) point source radiating  $1.464 \times 10^{-3}$  watts per steradian. Also called *new candle*.

**candle**

An outdated term. A unit of luminous intensity equal to the intensity of light from a 7/8-inch sperm candle burning at the rate of 120 grains an hour.

**candlepower**

A luminous intensity expressed in *candelas*; a candle one inch in diameter produces one candela in a horizontal direction.

**canister**

A container filled with a sorbent and possibly catalysts, for removing contaminants (gases or vapors) from air being inspired through the device.

**cannabis**

Commonly referred to as marijuana, *cannabis sativa L* embraces all marijuana-producing

cannabis. All parts of the plant *cannabis sativa* L, whether growing or not; the seeds thereof; the resin extracted from any part of such plant; and every compound, manufacture, salt, derivative, mixture, or preparation of such plant, its seeds or resin, are included in the term "marihuana." See also *controlled substance* and *marihuana*.

**canopy**

(1) The large fabric part of a parachute which fills with air to slow the fall of an individual or object. (2) The transparent cover for the cockpit of an aircraft.

**canopy hood**

A one- or two-sided exhaust hood designed to capture contaminants or heated air rising from an open tank, placed some distance from the tank.

**cant**

In the civil law, a method of dividing property held in common by two or more joint owners. It may be avoided by the consent of all of those who are interested, in the same manner that any other contract or agreement may be avoided.

**canthus**

The corner or angle formed by the junction of the eyelids. See also *endocanthus* and *ectocanthus*.

**cap**

(1) A soft type of head wear which is preformed and sized. (2) A covering for a jar, bottle, or other rigid structure to contain the enclosed items or to prevent access by moisture, children, mold, or other entities. (3) A layer of clay, or other highly impermeable material, installed over the top of a closed landfill to prevent entry of rainwater and minimize production of leachate.

**CAP**

Chemical accident prevention. See also *Control Assessment Protocol*.

**cap cloud**

See *pileus cloud*.

**cap lamp**

A lamp worn by miners or others working in dark areas which is attached to a safety cap or helmet.

**capable**

Susceptible, competent; qualified; fitting; possessing legal power or capacity.

**capacitance (C)**

The value of the ratio between the absolute charge of two equal but opposite charged conductors to the potential difference between them.

**capacitive touchscreen**

A video display having a thin layer of material over its front which uses a change in capacitance to indicate a touch location.

**capacity**

(1) The upper limit of an individual's ability to learn, understand, or perform through inherent ability, training, practice, and any other means. (2) See *endurance*.

**capacity defense**

Generic term to describe lack of fundamental ability to be accountable for actions, as one under duress lacks the capacity to contract, and hence when sued on such contract he/she interposes defense of lack of capacity.

**capacity factor**

The ratio between the actual electric output from a unit and the potential electric output from that unit.

**capacity per aircraft mile**

The average total passenger/cargo carrying capacity (tons) offered for sale per aircraft in revenue services, derived by dividing the overall available ton miles by the total aircraft miles flown in revenue services.

**CAPE**

See *Computerized Accommodated Percentage Evaluation*.

**cape**

A relatively extensive land area jutting into a water body, which prominently marks a change in or notably interrupts the coastal trend of that water body.

**capillarity**

The ability of a soil to retain a film of water around soil particles and in pores through the action of surface tension.

**capillary**

A small, thin-walled blood vessel connecting an artery with a vein.

**capillary action**

The action or movement of surface water, or water in very small interstices, due to the relative attraction of molecules of a liquid for each other and for those of a solid.

**capillary fringe**

The zone of porous material above the zone of saturation that may contain water due to capillarity.

**capital case (or crime)**

One in or for which the death penalty may, but need not necessarily, be imposed.

**capital employee**

*Transportation.* An employee involved with construction or capital procurement and who has no involvement with operation of the transit system.

**capital gains or losses, operating property**

Gains or losses on retirements of operating property and equipment, equipment expendable parts or miscellaneous materials and supplies when sold or otherwise retired in connection with a general retirement program as opposed to incidental sales performed as a service to others.

**capital gains or losses, other**

Gains or losses on no operating assets, investments in other than marketable equity securities, and troubled debt restructuring.

**capital program funds**

*Transportation.* Financial assistance from the Capital Program of 49 U.S.C. (formerly Section 3). This program enables the Secretary of Transportation to make discretionary capital grants and loans to finance public transportation projects divided among fixed guideway (rail) modernization; construction of new fixed guideway systems and extensions to fixed guideway systems; and replacement, rehabilitation, and purchase of buses and rented equipment, and construction of bus-related facilities.

**capitalized interest**

Adjustment to income for interest capitalized on funds actually committed as equipment purchase deposits or actually used to finance the construction or acquisition of operating property.

**capitate bone**

One bone of the distal group of bones in the wrist.

**capitulum**

A smooth hemispherical protuberance at the anterior distal end of the humerus which forms part of the joint with the radius head.

**capricious disregard**

A willful and deliberate disregard of competent testimony and relevant evidence which one of ordinary intelligence could not possibly have avoided in reaching the result.

**capsizing**

Overturning of a vessel. The bottom must be uppermost, except on the case of a sailboat, which lies on its side.

**captain of the port (COTP)**

The officer of the Coast Guard, under the command of a District Commander, designated by the Commandant for the purpose of giving immediate direction to Coast Guard law enforcement activities within an assigned area. The term *captain of the port* includes an authorized representative of the captain of the port.

**captive imports**

Products produced overseas specifically for domestic manufacturers.

**capture efficiency**

The fraction of all organic vapors generated by a process that are directed to an abatement or recovery device.

**capture gamma ray**

A high energy gamma ray that is emitted when the nucleus of an atom captures a neutron and becomes intensely excited.

**capture velocity**

The air velocity at any point in front of a hood or at the hood opening necessary to overcome opposing or ambient air currents and to capture air contaminants at that point by causing them to flow into the hood. Also referred to as *control velocity*.

**capturing hood**

A hood with sufficient airflow to reach outside the hood and draw in contaminants.

**CAR**

See *Computer Assessment of Reach*.

**car**

(1) Common term for an automobile. (2) Any unit of on-track equipment designed to be hauled by locomotives. (3) Any unit of on-track work equipment such as a track motor-car, highway-rail vehicle, push car, crane, ballast tamping machine, etc. (4) A railway car designed to carry freight, railroad personnel, or passengers. This includes boxcars, covered hopper cars, flatcars, refrigerator cars, gondola cars, hopper cars, tank cars, cabooses, stock cars, ventilation cars, and special cars. It also includes on-track maintenance equipment. *See also automobile, minivan, motor vehicle, taxi, and vehicle.*

**car capacity**

Load limitation of a freight car in terms of volume or weight.

**car-mile**

The movement of a car a distance of one mile.

**car shop repair track area**

One or more tracks within an area in which the testing, servicing, repair, inspection, or rebuilding of railroad rolling equipment is under the exclusive control of mechanical department personnel.

**car sickness**

That motion sickness due to travel in a road vehicle. *See also motion sickness.*

**CARB**

California Air Resources Board.

**carbohydrate**

A compound of carbon, hydrogen, and oxygen, the latter two in the proportions of water, synthesized by green plants. Carbohydrates in food are an important and immediate source of energy for the body. One gram of carbohydrate yields 4 calories. They are present, at least in small quantities, in most foods, but the chief sources are the sugars and starches. Carbohydrates may be stored in the body as glycogen for future use. If they are eaten in excessive amounts, however, the body changes them to fats and stores them in that form.

**carbohydrate loading**

The purposeful intake of large amounts of carbohydrates prior to a long-duration, physically fatiguing event in an attempt to generate additional glycogen reserves.

**carbon**

A chemical element, atomic number 6, atomic weight 12.011, symbol C. An element present in all materials of biological origin.

**carbon-14**

A naturally occurring radioactive isotope of carbon that emits beta particles when it undergoes radioactive decay.

**carbon adsorber**

An add-on device that uses activated carbon to adsorb volatile organic compounds from a gas stream. These compounds can later be recovered from the carbon for analysis.

**carbon arc lamp**

An arc lamp using carbon rods.

**carbon black**

An additive that prevents degradation of thermoplastics by ultraviolet light.

**carbon cycle**

A graphical presentation of the movement among living and nonliving matter.

**carbon dioxide (CO<sub>2</sub>)**

(1) A minor component of air representing about 0.4% of the atmosphere that is released by respiration and removed from the atmosphere by photosynthesis. It is a non-combustible gas. (2) A fluid consisting of more than 90 percent carbon dioxide molecules compressed to a supercritical state.

**carbon dioxide production rate ( $\dot{V}CO_2$ )**

That rate at which carbon dioxide is exhaled from the lungs.

**carbon fixation**

A process occurring in photosynthesis where atmospheric carbon dioxide gas is combined with hydrogen obtained from water molecules.

**carbon monoxide (CO)**

A colorless, odorless, and tasteless gas formed as a product of the incomplete combustion of organic materials. This gas has an affinity for red blood cells approximately 220 times that of oxygen which causes a decrease in pulmonary and cardiac function upon exposure. It is lethal to humans at concentrations exceeding 5000mg/L. An EPA-listed criterion pollutant.

**carbon steel**

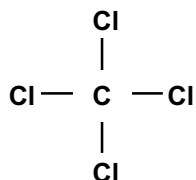
A general-purpose steel whose major properties depend on its 0.1 to 2% carbon content



without substantial amounts of other alloying elements.

**carbon tetrachloride**

A clear, colorless, mobile liquid (formula CCl<sub>4</sub>) once used widely as a solvent and in insecticides. It is highly toxic and even carcinogenic to the liver, kidney, and heart when persons are exposed to high concentrations. It is represented by the following structure:



**carbonaceous biochemical oxygen demand (CBOD)**

The portion of biochemical oxygen demand where oxygen consumption is due to oxidation of carbon, usually measured after a sample has been incubated for 5 days. Also called *first stage BOD*.

**carbonate**

A compound containing the anion radical of carbonic acid CO<sub>3</sub>.

**carbonate alkalinity**

Alkalinity caused by carbonate ions.

**carbonate hardness**

The hardness in water caused by bicarbonates and the carbonates of calcium and magnesium.

**carbonation**

The diffusion of carbon dioxide gas through a liquid.

**carbonator**

A device used to carbonate or re-carbonate water.

**carbonemia**

An excess of carbon dioxide in the blood.

**carboxyhemoglobin (HbCO)**

Hemoglobin in which the iron is associated with carbon monoxide (CO).

**carboy**

A large container used to store or transport liquid chemicals or water samples.

**carburetor**

A fuel delivery device for producing a proper mixture of gasoline vapor and air, and deliv-

ering it to the intake manifold of an internal combustion engine. Gasoline is gravity fed from a reservoir bowl into a throttle bore, where it is allowed to evaporate into the stream of air being inducted by the engine. The fuel efficiency of carburetors is more temperature dependent than fuel injection systems. *See also diesel fuel system and fuel injection.*

**carcinogen**

A substance known to cause cancer in humans and animals representing a broad range of organic and inorganic chemicals, hormones, immuno-suppressants, and solid-state materials.

**carcinogen risk assessment verification endeavor (CRAVE) work group**

An EPA work group formed to validate Agency carcinogen risk assessments and resolve conflicting potency values among various program offices.

**carcinogenesis**

The beginning or origin of a cancer.

**carcinogenic**

Describes agents known to induce cancers.

**carcinoma**

Malignant neoplasm composed of epithelial cells, regardless of the derivation. A form of cancer, carcinoma makes up the majority of the cases of malignancy of the breast, uterus, intestinal tract, skin, and tongue.

**carcinosis**

Widespread dissemination of cancer throughout the body.

**cardholder**

Refers to a member of a group such as a union wherein the card is the symbol and identification of membership.

**cardia**

That region of the superior stomach which contains the esophageal sphincter.

**cardiac**

Relating to the heart.

**cardiac arrhythmia**

An abnormality of the heart rhythm. Also commonly referred to as *arrhythmia* and *heart arrhythmia*.

**cardiac index**

The cardiac output per square meter of body surface area.



**cardiac muscle**

That branched, somewhat striated muscle comprising the wall of the heart which is involved in heart contractions.

**cardiac output**

The volume of blood pumped by the left ventricle of the heart in a given period of time. Usually expressed in liters per minute.

**cardiac pacemaker**

An electronic device which may be implanted in the body to provide regular stimulation to the heart.

**cardiac reserve**

That ability of the heart to increase its output above normal to meet an increased workload.

**cardinal altitude**

"Odd" or "even" thousand-foot altitudes or flight levels, e.g., 5,000, 6,000, 7,000, FL 250, FL 260, FL 270. *See also flight level.*

**cardinal planes**

The three standard planes used for describing the human body in the anatomical position: sagittal, coronal/frontal, and transverse/horizontal.

**cardiogram**

A record produced by cardiography.

**cardiograph**

An instrument for recording the movements of the heart.

**cardiography**

The graphic recording of a physical or functional aspect of the heart, e.g., electrocardiography, kinetocardiography, phonocardiography, vibrocardiography.

**cardiomyopathy**

A sub-acute or chronic disorder of the heart muscle, often with involvement of the endocardium and sometimes of the pericardium.

**cardiopulmonary**

Pertaining to the heart and lungs.

**cardiovascular**

Pertaining to the heart, blood, or blood-carrying vessels.

**cardiovascular shock**

Any condition exemplified by a sudden fall in blood pressure following an injury, operation, loss of blood, or administration of anesthesia. Often referred to simply as shock.

**cardiovascular system**

The system of the human body, including the heart, vessels, and veins, associated with blood distribution and transmission of cellular nutrients.

**care**

*Law.* Watchful attention; concern; custody; diligence; discretion; caution; prudence; regard; preservation; security; support; vigilance. Opposite of negligence or carelessness. To be concerned with, and to attend to, the needs of oneself or another. In the law of negligence, the amount of care demanded by the standard of reasonable conduct must be in proportion to the apparent risk. As the danger becomes greater, the actor is required to exercise caution (care) commensurate with it. There are three degrees of care which are frequently recognized, corresponding (inversely) to the three degrees of negligence: slight care, ordinary care, and great care. There is also the concept of reasonable care. *See also slight care, ordinary care, great care, and reasonable care.*

**careless**

Absence of care; negligence; reckless.

**carelessness**

That behavior or mental functioning which does not exhibit adequate attention or concern for the task being performed.

**carfloat**

(1) A vessel that operates on a short run on an irregular basis and serves one or more points in a port area as an extension of a rail line or highway over water, and does not operate in ocean, coastwise, or ferry service. (2) A barge equipped with tracks on which up to about 12 railroad cars are moved in harbors or inland waterways.

**cargo**

(1) The load (i.e., freight) of a vessel, train, truck, airplane, or other carrier. (2) Freight carried by a barge. (3) Property, mail and express; other than passengers transported. *See also commodity, freight, goods, and product.*

**cargo aircraft**

An aircraft that is used to transport cargo and is not engaged in carrying passengers. The terms cargo aircraft only, cargo-only aircraft, and cargo aircraft have the same meaning.

**cargo-carrying unit**

Any portion of a commercial motor vehicle (CMV) combination (other than a truck tractor) used for the carrying of cargo, including a trailer, semitrailer, or the cargo-carrying section of a single-unit truck.

**cargo crane**

A crane especially adapted to the transferring of cargo between a vessel's hold and a wharf.

**cargo insurance**

Insures risk that cargo will not be delivered in the same condition in which it was initially shipped. *See also insurance.*

**cargo insurance and freight (CIF)**

Refers to cargo for which the seller pays for the transportation and insurance up to the port of destination.

**cargo tank**

A bulk packaging which a) is a tank intended primarily for the carriage of liquids or gases and includes appurtenances, reinforcements, fittings, and closures; b) is permanently attached to or forms a part of a motor vehicle, or is not permanently attached to a motor vehicle but which, by reason of its size, construction, or attachment to a motor vehicle is loaded or unloaded without being removed from the motor vehicle; and c) is not fabricated under a specification for cylinders, portable tanks, tank cars, or multi-unit tank car tanks.

**cargo tank motor vehicle**

A motor vehicle with one or more cargo tanks permanently attached to or forming an integral part of the motor vehicle.

**cargo ton miles**

One ton of cargo transported one mile.

**cargo tonnes**

The tonnes of cargo carried by a vessel on each or any transit.

**cargo transfer system**

A component, or system of components functioning as a unit, used exclusively for transferring hazardous fluids in bulk between a tank car, tank truck, or marine vessel and a storage tank.

**cargo vessel**

- (1) Any vessel other than a passenger vessel.
- (2) Any ferry being operated under authority

of a change of character certificate issued by a Coast Guard Officer-in-Charge, Marine Inspection.

**carload**

(1) The quantity usually contained in an ordinary freight car used for transporting the particular commodity involved. A commercial unit which, by commercial usage, is a single whole for purposes of sale and division. (2) Shipment of freight required to fill a rail car. (3) A shipment of not less than 10,000 pounds of one commodity from one consignor to one consignee.

**Carmack Act**

Amendment to the Interstate Commerce Act prescribing liability of carrier for loss, damage, or injury to property carried in interstate commerce.

**carpal**

Pertaining to the carpus, or wrist.

**carpal tunnel**

An internal passage in the wrist between the extensor retinaculum and the carpal bones through which the median nerve, finger flexor tendons, and blood vessels pass from the arm to the hand.

**carpal tunnel syndrome (CTS)**

A cumulative trauma disorder (CTD) often associated with activities involving flexing or extending the wrists, or repeated force on the base of the palm and wrist. The *carpal tunnel* is an opening in the wrist under the carpal ligament on the palmar side of the carpal bones in the wrist. The median nerve, the finger flexor tendons, and blood vessels all pass through this tunnel. Overuse of the tendons can cause them to become inflamed and swollen, creating pressure against the adjacent median nerve and resulting in CST. Symptoms include tingling, pain, or numbness in the thumb and first three fingers. *See also repetitive motion injury.*

**carpenter's bracket scaffold**

A scaffold consisting of wood or metal brackets supporting a platform.

**carpenter's elbow**

A type of cumulative trauma disorder (CTD) associated with repeatedly pushing the palm downward in such a way that a deviation of

the ulnar nerve occurs. Symptoms include pain in the elbow, forearm, and hand.

**carpool**

An arrangement where two or more people share the use and cost of privately owned automobiles in traveling to and from pre-arranged destinations together.

**carpus**

The eight bones composing the articulation between the hand and the forearm; the wrist.

**carriage**

Transportation of goods, freight, or passengers.

**Carriage of Goods by Sea Act**

Federal act governing the most important of the rights, responsibilities, liabilities, and immunities arising out of the relation of the issuer to the holder of the ocean bill of lading, with respect to loss or damage of goods.

**carried carload**

Any carload which travels on a particular railroad.

**carrier**

(1) An agent by which something is carried, especially an individual harboring pathogenic microorganisms and capable of transmitting them to others. (2) Individual or organization engaged in transporting passengers of goods for hire. (3) Any person engaged in the transportation of passengers or property by land, as a common, contract, or private carrier, or a freight forwarder, as those terms are used in the Interstate Commerce Act (as amended), and officers, agents, and employees of such carriers. *See also* **common carrier**, **contract carrier**, and **private carrier**.

**carrier gas**

Gases such as nitrogen, helium, argon, and hydrogen that are used in gas chromatography or other laboratory procedures to sweep (or "carry") another gas or vapor through a system.

**carrier group**

A grouping of certificated air carriers determined by annual operating revenues as follows: majors, >\$1 billion; nationals, \$100 million to \$1 billion; large regionals, \$20 million to \$99.9 million; medium regionals, \$0 to \$19.9 million or that operate aircraft

with 60 or less seats or maximum payload capacity of 18,000 lbs.

**carrier liability**

A common carrier is liable for all loss, damage, and delay with the exception of an act of God, act of a public enemy, act of a public authority, act of the shipper, and the inherent nature of the goods. Carrier liability is specified in the terms of the bill of lading.

**carrier's lien**

The right to hold the consignee's cargo until payment is made for the work of transporting it.

**Carroll doctrine**

Rule of law to the effect that an existing licensee has standing to contest the grant of a competitive licensee because of economic injury to an existing station becomes important when, on the facts, it spells diminution or destruction of service.

**carrot and stick approach**

The Federal Sentencing Guidelines (FSGs) for organizations address business conduct through this approach. The "stick" is a mandatory schedule of stiff fines, which can increase with the severity of the violation and can reach hundreds of millions of dollars. The "carrot" lies in the prospect of mitigation credit if, before an offense occurs, a company has instituted an effective program to prevent and detect violations of law. *See also* **positive incentives**, **interactive corporate compliance**, **effective compliance program**.

**carry costs**

A verdict is said to carry costs when the party for whom the verdict is given becomes entitled to the payment of his/her costs incurred as a result of or as incident to such verdict.

**carrying capacity**

(1) *Recreation Management*. The amount of use a recreation area can sustain without deterioration of its quality. (2) *Wildlife Management*. The maximum number of animals an area can support during a given period of the year.

**carryout collection**

The collection of solid waste from a storage area proximate to the dwelling unit(s) or establishment.

**cartage**

Usually refers to intra-city hauling on drays or trucks.

**Cartesian coordinate system**

See *rectangular coordinate system*.

**cartilage**

A tough, fibrous, non-vascular connective tissue frequently found at the articulating ends of bones or as a forming material in tubular structures in the body. Also referred to as *gristle*.

**cartridge filter**

(1) Filter unit with cylindrical replaceable elements or cartridges. (2) A small canister that is employed to remove contaminants from inspired air.

**Carver-Greenfield process**

A multiple effect evaporation process to extract water from sludge.

**CAS**

See *Chemical Abstracts System*.

**CAS number**

Chemical Abstracts Service Registry number which is a unique identification number that is assigned to each chemical. The Chemical Abstract Service is a division of the American Chemical Society.

**cascade impactor**

A device used to measure the size range of airborne particles based on the principle that a high velocity air stream striking a flat surface at a 90° angle will cause a sudden change in air direction and momentum. This will also cause the dust in the air to be deposited on a plate and to be separated from the air stream. A series of plates are used to capture different-sized particles, which can then be analyzed for total weight, particle count, and chemical composition.

**cascade method**

An experimental technique for determining visual stimuli relationships in which an observer sequentially adjusts the wavelength of one of a pair of visual stimuli until a minimal difference exists.

**cascading failure**

Any secondary or other failure which results from the failure of another system or component.

**case**

(1) *Law*. A general term for an action, cause, suit, or controversy, at law or in equity; a question contested before a court of justice; an aggregate of facts which furnishes occasion for the exercise of the jurisdiction of a court of justice. A judicial proceeding for the determination of a controversy between parties wherein rights are enforced or protected, or wrongs are prevented or redressed; any proceeding judicial in its nature. (2) *Medical*. A particular instance of disease, as a case of leukemia; sometimes used incorrectly to designate the patient with the disease. (3) *Maritime*. a) An investigation of a particular boating problem or incident to determine if there is a substantial risk to the public or violation of the regulations. A case may become a campaign. b) A single incident of distress to which one or more Coast Guard units respond.

**case control study**

An epidemiology study which starts with the identification of individuals with a disease or adverse health effect of interest and a suitable control group without the disease.

**case in chief**

That part of a trial in which the party with the initial burden of proof presents his/her evidence, after which he/she rests.

**case law**

The aggregate of reported cases as forming a body of jurisprudence, or the law of a particular subject as evidenced or formed by the adjudged cases, in distinction to statutes and other sources of law. It includes the aggregate of reported cases that interpret statutes, regulations, and constitutional provisions.

**casing**

A pipe or tube placed in a bore hole to support the sides of the hole and to prevent other fluids from entering or leaving the hole.

**cask**

A thick-walled container (usually lead) used to transport radioactive material. Also called a *coffin*.

**cassette**

A light-proof housing for x-ray film, containing front and back intensifying screens, between which the film is placed.

**cassette loop analysis**

The selection of some videotaped task or operation with cutting and splicing or copying to form a continuous loop for repeated viewing. *See also film loop analysis.*

**cast iron**

A general description for a group of iron-carbon-silicon metallic products obtained by reducing iron ore with carbon at temperatures high enough to render the metal fluid and cast it in a mold.

**caster**

A small, either fixed or swiveling, wheel attached to the base of an object for ease of movement across a surface.

**casual employment**

Employment at uncertain or irregular times. Employment for a short time and limited, temporary purpose. Occasional, irregular or incidental employment. Such employee does not normally receive seniority rights nor, if hours worked are below a certain number each week, fringe benefits. By statute in many states, such employment may or may not be subject to workers' compensation at the election of the employer. The test is the nature of the work or the scope of the contract of employment or the continuity of employment.

**casualty**

(1) *General.* A serious or fatal accident. A person or thing injured, lost, or destroyed. A disastrous occurrence due to sudden, unexpected, or unusual cause. Accident, misfortune or mishap; that which comes by chance or without design. A loss from such an event or cause; as by fire, shipwreck, lightning, etc. (2) *Federal Railroad Administration.* a) A fatality, a nonfatal injury, or an occupational illness resulting from railroad operations. b) A reportable death, injury, or illness arising from the operation of a railroad. Casualties may be classified as either fatal or nonfatal. *See also accident, loss, and unavoidable casualty.*

**casualty insurance**

That type of insurance that is primarily concerned with losses caused by injuries to persons and legal liability imposed upon the insured for such injury or for damages to the property of others. *See also insurance.*

**casualty loss**

A casualty loss is defined for tax purposes as the complete or partial destruction of property resulting from an identifiable event of a sudden, unexpected, or unusual nature (e.g., floods, storms, fires, auto accidents). Individuals may deduct business casualty losses in full. Losses include those in a trade or business or incurred in a transaction entered into for a profit. Personal or non-business casualty losses are deductible by individuals as itemized deductions.

**casus fortuitus**

*Latin.* An inevitable accident, a chance occurrence, or fortuitous event. A loss happening in spite of all human effort and sagacity.

**CAT**

*See computerized axial tomography. See also clear air turbulence.*

**cat-scratch disease**

An infection most frequently acquired through the scratch of a cat. It is actually sterile regional lymphadenitis. The disease is probably caused by a virus that is found between the claws of cats and kittens. Here, the virus usually does no harm to the cat, and the animal appears healthy. But a scratch may transfer the virus to a human being. In approximately half the cases, after several days there is a persistent sore at the site of the scratch, and fever and other symptoms of infection may develop. There is also swelling of the lymph nodes draining the infected part. In milder cases, the symptoms soon disappear, with no aftereffects. Sometimes the attack is more serious and the glands may require surgical incision and drainage. This disease is generally mild and lasts for about 2 weeks. In rare cases, it may persist for a period of up to 2 years.

**catabolism**

Destructive metabolism; the process by which an organism reconverts living, organized substances into simpler compounds, with release of energy for its use.

**cataplexy**

A movement disorder in which the body experiences a loss of voluntary motion and a rigidity of passively moved parts for prolonged periods of time.

**catalyst**

A substance which can alter the speed of a chemical reaction without being chemically altered itself by the reaction.

**catalytic converter**

An air pollution abatement device that removes pollutants from motor vehicle exhaust, either by oxidizing them into carbon dioxide and water or reducing them to nitrogen and oxygen.

**catalytic incinerator**

A control device which oxidizes volatile organic compounds by using a catalyst to promote the combustion process. Catalytic incinerators require lower temperatures than conventional thermal incinerators, with resultant fuel and cost savings.

**catalytic sensor**

*Instruments.* A sensor with heated active and reference elements (i.e., each a platinum wire). The heat of combustion of the contaminant on the active element produces an imbalance in a bridge circuit such that the amount of imbalance is proportional to the concentration of the contaminant in the sampled air. This type detector can detect and measure the concentration of combustible gases or vapors well below their lower flammable/combustible limit.

**catanadramous**

Fish that swim downstream to spawn.

**cataplexy**

A movement disorder characterized by rapid onset of partial or complete loss of muscle tone as a result of extremely intense emotion.

**cataract**

A clouding of the crystalline lens of the eye. The clouding obstructs the passage of light. Cataracts are caused by free-radical damage that clouds the eye's lens (which inhibits its ability to focus light) and reduces or scatters light entering the eye. Depending on their size and location, cataracts can reduce vision slightly or cause blindness.

**catastrophe**

A notable disaster; a more serious calamity than might ordinarily be understood from the term *casualty*. An utter or complete failure. An event resulting in injury, death, and damage or destruction of relatively great propor-

tion. Often also considered relative to the scope of activities (i.e., at an individual or system level). *See also* [casualty](#).

**catastrophic**

A loss of extraordinary magnitude in physical harm to people or damage and destruction of property.

**catastrophic event**

*System Safety.* An occurrence, subsequent to the introduction of a hazard or set of hazards into a system, that results in a level of injury, damage, or loss of such severe magnitude that quick or total recovery would be highly improbable (e.g., death, crippling injuries, total system loss, irreplaceable property or equipment loss or damage, etc.). The parameters for this categorization are usually established by management in the System Safety Program Plan, or other policy-making documentation.

**catastrophic release**

According to OSHA, a major uncontrolled emission, fire, or explosion, involving one or more highly hazardous chemicals, that presents serious danger to employees in the workplace.

**catatonia**

A form of schizophrenia marked by conspicuous motor disturbances (retardation and stupor, or excessive activity and excitement).

**catch basin**

A well or reservoir for storm water runoff which can be located in paved areas, unpaved locations such as near roof drains, or in draining areas.

**catchment**

A barrel, cistern, or other container used to catch water.

**catchment area**

The area of land bounded by watersheds draining into a river, lake, or reservoir.

**catch-up growth**

A period of rapid growth following a growth retarding event, such as a severe illness or malnutrition.

**catecholamine**

Any of a group of chemical substances consisting of a benzene ring with adjacent hydroxyl groups and an amine group on a carbon chain which may serve as a



neurotransmitter and/or a hormone. *See also epinephrine and norepinephrine.*

**category III operations**

*Aviation.* With respect to the operation of aircraft, means an Instrument Landing System (ILS) approach to, and landing on, the runway of an airport using a Category III ILS instrument approach procedure issued by the Federal Aviation Administration (FAA) Administrator or other appropriate authority.

**category I contaminant**

*Aviation.* (1) As used with respect to the certification, ratings, privileges, and limitations of airmen, means a broad classification of aircraft. Examples include airplane, rotorcraft glider, and lighter-than-air. (2) As used with respect to the certification of aircraft, means a grouping of aircraft based upon intended use or operating limitations. Examples include transport, normal, utility, acrobatic, limited, restricted, and provisional.

**category II contaminant**

U.S. EPA contaminant category indicating that sufficient evidence of carcinogenicity via ingestion in humans or animals exists to warrant classification as "known or probable human carcinogens via ingestion."

**category II operations**

*Aviation.* With respect to the operation of aircraft, means a straight-in Instrument Landing System (ILS) approach to the runway of an airport under a Category II ILS instrument approach procedure issued by the Federal Aviation Administration (FAA) Administrator or other appropriate authority.

**category III contaminant**

U.S. EPA contaminant category of substances for which insufficient or no evidence of carcinogenicity via ingestion exists.

**category A**

*Aviation.* With respect to transport category rotorcraft, means multi-engine rotorcraft designed with engine and system isolation features specified in 14 CFR Part 29 and utilizing scheduled takeoff and landing operations under a critical engine failure concept which assures adequate designated surface area and adequate performance capability for continued safe flight in the event of engine failure.

**category A EED/ordnance**

An electroexplosive device (EED) or other such ordnance that, by the expenditure of their own energy or because they initiate a chain of events, may cause serious injury or death to personnel and/or damage to property.

**category B**

*Aviation.* With respect to transport category rotorcraft, means single-engine or multi-engine rotorcraft which do not fully meet all Category A standards. Category B rotorcraft have no guaranteed stay-up ability in the event of engine failure and unscheduled landing is assumed.

**category B EED/ordnance**

An electroexplosive device or other such ordnance that, by the expenditure of their own energy or because they initiate a chain of events, will not cause serious injury or death to personnel and/or damage to property.

**catenary bar screen**

Mechanical screening device using revolving chain-mounted rakes to clean a stationary bar rack.

**catheter**

A tubular instrument of rubber, plastic, metal, or other material, used for draining or injecting fluids through a body passage.

**catheterization**

Passage of a catheter into a body channel or cavity. The most common usage of the term

is in reference to the introduction of a catheter via the urethra into the urinary bladder.

**cathode**

The negative electrode where the current leaves an electrolytic solution.

**cathode ray tube (CRT)**

A vacuum tube in which an electron beam is directed at a phosphor-coated screen. The component of a video display terminal that generates the display.

**cathodic protection**

A technique to prevent corrosion of a metal surface by making that surface the cathode of an electrochemical cell.

**cation**

A positively charged ion that migrates to the cathode when an electrical potential is applied to a solution.

**cationic detergent**

Any of a group of detergents having a quaternary ammonium salt cation with a hydrocarbon chain.

**cationic polymer**

A polyelectrolyte with a net positive electrical charge.

**cauliflower ear**

A thickened and deformed ear caused by the accumulation of fluid and blood clots in the tissue following repeated injury. It is most commonly seen in boxers, for whom it is almost considered an occupational hazard. A cauliflower ear will not recover its normal shape but it can be restored to normal by means of plastic surgery.

**causal association**

Having a demonstrable connection between the occurrence of some factor and an incident, where the presence of that factor will increase the probability and the absence of that factor will decrease the probability of that incident.

**causal factors**

A combination of simultaneous or sequential circumstances which contribute directly or indirectly to an accident, occupational disease, or other effect.

**causalgia**

Persistent, diffuse, and burning pain associated with trophic skin changes in the hand or foot following injury of the part. The syn-

drome may be aggravated by the slightest stimulus or it may be intensified by emotions. Causalgia usually begins several weeks after the initial injury and the pain is described as intense.

**causation**

The fact of being the cause of something produced or of happening. The act by which an effect is produced. An important doctrine in the fields of negligence and criminal law. Sometimes referred to as *proximate cause*.

**causator**

A litigant; one who takes the part of the plaintiff or defendant in an action.

**cause**

(1) *General (verb)*. To be the cause or occasion of; to effect as an agent; to bring about; to bring into existence; to make to induce; to compel. (2) *Safety (noun)*. An event, situation, or condition which results, or could result (*potential cause*), directly or indirectly, in an accident or incident. Each separate antecedent of an event. Something that proceeds and brings about an effect or result. (3) *Law (noun)*. A suit, litigation, or action. Any question, civil or criminal, litigated or contested before a court of justice.

**cause-effect diagram**

A graphic display of the causes linked to an effect.

**cause in fact**

That particular cause which produces an event and without which the event would not have occurred. Courts express this form of a rule commonly referred to as the "but for" rule: the injury to an individual would not have happened but for the conduct of the wrongdoer. *See also proximate cause*.

**cause of action**

The claim or theory invoked by a plaintiff in a court case.

**cause of injury**

That which actually produces it.

**causeway**

A raised roadbed through low lands or across wet ground or water.

**caustic**

(1) Any substance that strongly irritates, burns, corrodes, or destroys living tissue. (2)

A class of substances, also known as bases or alkalis, with high pH. Strong caustics are corrosive.

**caustic soda**

Common term for sodium hydroxide. Chemical formula is NaOH.

**caution**

To warn, exhort, to take heed, or give notice of danger. *See also [caution signal](#).*

**caution and warning (C&W)**

A system of classification for providing information to the operator or crew of a vehicle that some life- or vehicle-threatening hazardous situation exists.

**caution signal**

A signal provided for or presented to the operator or crew of a vehicle that some hazardous condition exists or will soon exist, and that action will be required to correct the situation. *See also [caution](#).*

**cautionary instruction**

*Law.* That part of a judge's charge to a jury in which he/she instructs them to consider certain evidence only for a specific purpose, e.g., evidence that a criminal defendant committed crimes other than the crime for which he/she is on trial may be admitted to prove a scheme or to show intent as to this crime, but not to prove that he/she committed this particular crime and such evidence requires cautionary instructions. Also, instructions by a judge to a jury to not be influenced by extraneous matters on outside forces, or to talk about cases to anyone outside of trial.

**caval**

*See [kevel](#).*

**caveat**

*Latin.* Meaning "let him beware." A warning to one to be careful. A formal notice or warning given by an interested party to a court, judge, or ministerial officer against the performance of certain acts within his/her power and jurisdiction.

**caveat emptor**

Meaning "let the buyer beware," without a warranty the buyer takes the risk of quality upon himself/herself.

**caveat venditor**

Meaning "let the seller beware."

**caving bank**

A bank which is eroding because of swift running currents along the shore or because of eddies below bends or along the shoreline whether on right- or left-handed drafts. More prevalent on rivers with unstable channels and during periods of high water; very common occurrence on the Lower Mississippi River.

**cavitation**

(1) A selective corrosion that results from the collapse of air or vapor bubbles with sufficient force to cause metal loss or pitting. (2) The action of a pump attempting to discharge more water than suction can provide. Vibration, noise, and/or physical damage to equipment can result.

**CBA**

*See [cost-benefit analysis](#).*

**CBC**

*See [complete blood count](#).*

**CBD**

*See [Central Business District](#).*

**CBOD**

*See [carbonaceous biochemical oxygen demand](#).*

**CCB**

Coal combustion byproducts.

**CCL**

*See [convective condensation level](#).*

**CDC**

*See [Centers for Disease Control](#).*

**CDL**

*See [commercial driver's license](#).*

**CDLIS**

*See [commercial driver's license information system](#).*

**cd/m<sup>2</sup>**

Candela per square meter.

**CDT programs**

*See [controlled departure time programs](#).*

**Ce**

*See [coefficient of entry](#).*

**cease**

To stop; to become extinct; to pass away; to suspend, or to forfeit.

**cease and desist order**

An order issued by an administrative agency or court prohibiting a person or business firm from continuing a particular course of conduct.

**CEEL**

Community emergency exposure limit.

**CEF**

Cellulose ester filter.

**ceiling**

(1) The upper limit of performance measured by a test. (2) The upper interior surface of a large enclosed volume, such as a room. (3) The height of the lowest layer of clouds when the weather reports describe the sky as broken or overcast, or, the height above the earth's surface of the lowest layer of clouds or obscuring phenomena that is reported as "broken", "overcast", or "obscured", and not classified as "thin" or "partial." The height above the ground or water of the base of the lowest layer of the cloud below 6,000 meters (20,000 feet) covering more than half the sky.

**ceiling area lighting**

A form of general illumination in which the ceiling area comprises essentially one large luminaire.

**ceiling balloon**

A small balloon used to determine the height of the cloud base. The height is computed from the balloon's ascent rate and the time required for its disappearance into the cloud.

**ceiling exposure limit (CEL)**

(1) The absolute concentration of a chemical to which workers should never be exposed, even instantaneously, during any part of a working day. (2) An OSHA standard setting the maximum concentration of a contaminant to which a worker may be exposed. (3) The ACGIH has established ceiling limits for some substances as part of its threshold limit value table (TLV-C).

**ceiling plenum**

Space below the flooring and above a suspended ceiling that accommodates the mechanical and electrical equipment and that is used as part of the air distribution system. The space is kept under negative pressure.

**ceilometer**

An instrument that automatically records cloud height.

**CEL**

See *ceiling exposure limit*.

**cell**

(1) The fundamental unit of structure and function in organisms. Although cells may be highly differentiated and highly specialized in their function, they all have the same basic structure; that is, they have an outer covering called the membrane, a main substance called the cytoplasm, and a control center called the nucleus. The cytoplasm and the substance of the nucleus (nucleoplasm or karyoplasm) are collectively referred to as protoplasm. Cell membranes are capable of selection in the passage of substances into and out of the cell. Cells in the body are organized into tissue and tissues into organs. The fluid within the cell (60 to 90 percent of the protoplasm is water) is called intracellular fluid. The fluid surrounding the cell and within the tissues is called interstitial fluid or tissue fluid. The molecules and ions in these fluids are essential to the life of the cell. (2) In solid waste disposal, cells are holes where waste is dumped, compacted, and covered with layers of dirt on a daily basis. (3) A place of confinement, as a prison cell.

**cell life**

*Instrument.* The period over which an instrument detector can reasonably be expected to meet the performance specifications for the device.

**cellular refractory period**

That time following an action potential in a neuron or muscle cell during which the cell has reduced excitability or is incapable of normal excitation. Also referred to simply as the refractory period.

**cellulitis**

An inflammation of tissues that produces pain, edema, swelling, and functional difficulties. It may be caused by streptococcal, staphylococcal, or other organisms. It usually occurs in the loose tissues beneath the skin, but may also occur in tissues beneath mucous membranes or around muscle bundles or surrounding organs.

**cellulose**

The structural form of polysaccharides in plants, acting as a support for plant tissues.

**Celsius degree (°C)**

A division of the Celsius temperature scale which divides the range between the freezing and boiling points of water into 100 equal intervals. Synonymous with *Centigrade degree*.

**Celsius thermometer**

Centigrade thermometer on which the ice point is at 0 and the normal boiling point of water is at 100 degrees (100°C), with the interval between these two established points divided into 100 equal units. The abbreviation 100°C should be read "one hundred degrees Celsius." It relates to the absolute (Kelvin) scale by  $T_C = T_K - 273.15$ .

**CEMA**

Conveyor Equipment Manufacturers Association.

**cement**

A powder that, mixed with water, binds a stone and sand mixture into strong concrete when dry.

**cement dermatitis**

An inflammation of the skin's surface resulting from an allergic reaction on exposure to cement or cement mixing products. *See also industrial dermatitis*.

**cement kiln dust**

Alkaline material produced during the manufacture of cement that may be used to stabilize sludge.

**cement mixer**

*Transportation (slang)*. A truck with a noisy engine or transmission.

**cementing**

The process of pumping a cement slurry into a drilled hole and/or forced behind the casing.

**cementitious material**

Asbestos-containing materials that are densely packed and are non-friable.

**CEMS**

*See continuous emission monitoring system*.

**censored data**

Monitoring results that are non-quantified because they are less than the limit of detection.

**censure**

The formal resolution of a legislative, administrative, or other body reprimanding a person, normally one of its own members, for specified conduct. An official reprimand or condemnation.

**census**

The complete enumeration of a population or groups at a point in time with respect to well-defined characteristics. For example, population, production, and/or traffic on particular roads. In some connection the term is associated with the data collected rather than the extent of the collection so that the term *sample census* has a distinct meaning. The partial enumeration resulting from a failure to cover the whole population, as distinct from a designed sample inquiry, may be referred to as an "incomplete census."

**census division**

A geographic area consisting of several states defined by the U.S. Department of Commerce, Bureau of the Census. The states are grouped into nine divisions and four regions.

**center area**

*Aviation*. The specified airspace within which an Air Route Traffic Control Center (ARTCC) provides air traffic control and advisory service.

**center frequency**

The geometric mean of a frequency band.

**center of gravity**

A point representing a body or system at which the force due to a uniform gravitational attraction acts. With regard to human factors, the *center of mass* and center of gravity can normally be assumed to be the same point. *See also center of mass*.

**center of mass**

That point of an object or system which may be treated as if the entire mass of the object or system were concentrated at that point, and any external translational forces appear to act through that point. With regard to human factors, the center of mass and the *center of gravity* can normally be assumed to be the same point. *See also center of gravity*.

**center of rotation**

That point about which a rotational movement occurs.

**center pivot irrigation machine**

A center pivot irrigation machine is a multi-motored irrigation machine which revolves around a center pivot point and employs alignment switches or similar devices to control individual motors.

**Center Radar Approach Control (CERAP)**

A combined Air Route Traffic Control Center (ARTCC) and a Terminal Radar Approach Control facility (TRACON).

**center weather advisory (CWA)**

An unscheduled weather advisory issued by Center Weather Service Unit meteorologists for Air Traffic Control (ATC) use to alert pilots of existing or anticipated adverse weather conditions within the next 2 hours. A CWA may modify or redefine a SIGMET.

**Centers for Disease Control (CDC)**

A U.S. Department of Health agency responsible for surveillance of disease patterns, developing disease control and prevention procedures, and public health education.

**centi-**

A prefix; one one-hundredth or  $10^{-2}$  of a base unit.

**centigrade**

Having 100 gradations (steps or degrees), as in the Celsius temperature scale (thermometer). *See also Celsius thermometer.*

**centigrade degree**

*See Celsius degree.*

**centile point**

A point within a centile scale. *See also centile scale.*

**centile rank**

That position or score based on a centile scale. *See also percentile.*

**centile scale**

A dispersion scale having a range of 100 in which each point represents one percent of the population along some dimension.

**centimeter**

One-hundredth of a meter, abbreviated cm.

**centimeter-gram-second (CGS) system**

A coherent system of units for mechanics, electricity, and magnetism, in which the basic units of length, mass, and time are the centimeter, gram, and second. Sometimes referred to as the *CGS System*. *See also basic units.*

**centipoise (cp)**

(1) One one-hundredth of a poise. The poise is the metric system unit of viscosity. *See also poise.* (2) A unit of the dynamic viscosity of a liquid. The dynamic viscosity of water at 20°C is 1 centipoise.

**centistoke (cSt)**

One one-hundredth of a stoke, the kinematic unit of viscosity. It is equal to the viscosity in poise divided by the density of the fluid in grams per cubic centimeter, both measured at the same temperature.

**central blindness**

The lack of visual function due to optic nerve or visual cortex damage. *See also foveal blindness.*

**Central Business District (CBD)**

The downtown retail trade and commercial area of a city or an area of very high land valuation, traffic flow, and concentration of retail business offices, theaters, hotels, and services.

**central city**

Usually one or more legally incorporated cities within the metropolitan statistical area (MSA) that is significantly large by itself or large relative to the largest city in the MSA. Additional criteria for being classified as a "central city" include having at least 75 jobs for each 100 employed residents and having at least 40 percent of the resident workers employed within the city limits. Every MSA has at least one central city, usually the largest city. Central cities are commonly regarded as relatively large communities with a denser population and a higher concentration of economic activities than the outlying or suburban areas of the MSA. "Outside central city" are those parts of the MSA not designated as central city. *See also metropolitan statistical area (MSA), and standard metropolitan statistical area.*

**central deafness**

*See central hearing loss.*

**Central East Pacific**

*Aviation.* An organized route system between the U.S. West Coast and Hawaii.

**central hearing loss**

A hearing impairment of deafness due to auditory nerve or auditory cortex damage. Synonymous with *central deafness*.



**Central Intelligence Agency (CIA)**

An agency of the federal government charged with the responsibility of coordinating all information relating to security of the country. All such intelligence information, recommendations, etc. are reported to the National Security Council, to whom the CIA is responsible and under the direction of.

**central nervous system (CNS)**

The portion of the human control and sensory feedback system consisting of the brain, spinal cord, and tributary nerve endings.

**central tendency**

Having a typical, average, or expected value within a frequency distribution. A finer characterization of data beyond the distribution.

**central vision**

See *foveal vision*.

**central visual field**

That portion of the visual field which falls on the foveal or macula lutea portion of the retina. Opposite of *peripheral visual field*.

**central visual field blindness**

See *foveal blindness*.

**centralization**

Concentration of power and authority in a central organization or government. For example, power and authority over national and international matters are centralized in the federal government.

**centrate**

Dilute stream remaining in a centrifuge after solids are removed.

**centrifugal**

Moving away from a center.

**centrifugal collector**

A mechanical system using centrifugal force to remove aerosols from a gas stream.

**centrifugal force**

That outwardly directed radial force in a rotating reference frame. Opposite of *centripetal force*.

**centrifugal pump**

A pump with a high-speed impeller that relies on centrifugal force to throw incoming liquid to the periphery of the impeller housing where velocity is converted to head pressure.

**centrifugation**

The use of centrifugal force to separate solids from liquids based on density differences.

**centrifuge**

A laboratory device used to subject substances in solution to centrifugal forces 20,000-25,000 times gravity.

**centripetal acceleration**

The inward-directed acceleration on a particle moving in a curved path.

**centripetal force**

That radial force directed toward the center of rotation of an object which keeps an object moving in a circular path. Opposite of *centrifugal force*.

**CEO**

Abbreviation for Chief Executive Officer of a corporation.

**CEQ**

See *Council on Environmental Quality*.

**CEQ regulations**

Under the National Environmental Policy Act (NEPA), the regulations called for federal agencies to integrate NEPA requirements to ensure that plans and decisions reflect environmental values, avoid delays later in the process, and head off potential conflicts. See also *Council on Environmental Quality*.

**CERAP**

See *Center Radar Approach Control*.

**CERCLA**

See *Comprehensive Environmental Response, Compensation, and Liabilities Act*.

**CERCLIS**

A database maintained by the EPA and the states which lists sites where releases of contamination either have been addressed or need to be addressed.

**cerebellum**

That part of the hind-brain lying dorsal to the pons and medulla oblongata, comprising a median portion (the vermis) and a cerebellar hemisphere on each side; the cerebellum is concerned with coordination of movements.

**cerebral**

Pertaining to the cerebrum.

**cerebral cortex**

The outer layer of gray matter of the brain, which governs thought, reasoning, memory, sensation, and voluntary movement.

**cerebral palsy**

Any impairment of motor, perceptual, or behavioral function dating from birth or infancy without worsening of symptoms.

**cerebrospinal fluid (CSF)**

The fluid in the subarachnoid spaces surrounding the brain and spinal cord, and in the ventricles of the brain. The fluid is formed continuously by the choroid plexus in the ventricles, and, so that there will not be an abnormal increase in the amount and pressure, it is reabsorbed into the blood by the arachnoid villi at approximately the same rate at which it is produced. The fluid aids in the protection of the brain, spinal cord, and meninges by acting as a watery cushion surrounding them to absorb the shocks to which they are exposed. There is a blood-cerebrospinal fluid barrier that prevents harmful substances, such as metal poisons, some pathogenic organisms, and certain drugs from passing from the capillaries into the cerebrospinal fluid.

**cerebrum**

The main portion of the brain occupying the upper part of the cranium; the two cerebral hemispheres, united by the corpus callosum, form the largest part of the central nervous system in humans.

**CERES**

See *Coalition for Environmentally Responsible Economies*.

**cerium**

A chemical element, atomic number 58, atomic weight 140.12, symbol Ce.

**CERMS**

Continuous emissions rate monitoring system.

**certainty**

Absence of doubt; accuracy; precision; definite. The quality of being specific, accurate, and distinct.

**certificate**

A written assurance, or official representation, that some act has or has not been done, or some event occurred, or with which some legal formality has been compiled. A written assurance made or issuing from some court,

and designed as a notice of things done therein, or as a warrant or authority, to some other court, judge, or officer. A statement of some fact in a writing signed by the party certifying.

**certificate of destruction**

See *certificate of disposal*.

**certificate of disposal (COD)**

A document that verifies destruction, the receipt of destruction, or successful delivery of waste to an ultimate or intermediary location prior to destruction. While these documents are considered by some transporters and generators as legal proof of the end of their liability for contamination, they may only serve to prove responsibility for contribution to a site that is later identified by the EPA as a Superfund site. Also referred to as *certificate of destruction*.

**certificate of inspection**

A document certifying that merchandise (such as perishable goods) was in good condition immediately prior to shipment. Pre-shipment inspection is a requirement for importation of goods into many developing countries.

**certificate of origin**

A form showing the country of production of export shipment, frequently required by customs officials of an importing country. The certificate enables customs officials to determine which goods being imported are entitled to preferential tariff treatment. It is usually endorsed by a consular official of the country of destination at the port of shipment.

**Certificate of Public Convenience and Necessity**

(1) *Aviation*. A certificate issued to an air carrier under Section 401 of the Federal Aviation Act by the U.S. Department of Transportation (DOT) authorizing the carrier to engage in air transportation. (2) *Maritime*. The grant of operating authority (issued by the Interstate Commerce Commission (ICC) and the Federal Maritime Commission (FMC) that is given to common carriers. A carrier must prove that a public need exists and that the carrier is fit, willing, and able to provide the needed service. The certificate may specify the commodities to be hauled, the area to be served, and the routes to be used.

**certificated**

Holding a currently valid Certificate of Public Convenience and Necessity.

**certificated air carrier**

An air carrier holding a Certificate of Public Convenience and Necessity issued by DOT to conduct scheduled services interstate. Non-scheduled or charter operations may also be conducted by these carriers. These carriers operate large aircraft (30 seats or more or a maximum payload capacity of 7,500 pounds or more) in accordance with Federal Aviation Regulations (FAR) Part 121.

**certificated airport**

An airport operating under Federal Aviation Regulations (FAR) Part 139. The Federal Aviation Administration (FAA) issues airport operating certificates to all airports serving scheduled air carrier aircraft designed for more than 30 passenger seats. Certificated airports must meet minimum safety standards in accordance with Federal Aviation Regulations (FAR) Part 139.

**certification**

(1) Granted by some states to certain laboratories; ensures that laboratories meet certain minimum standards. (2) A manufacturer's statement that the boat they manufacture is subject to the Federal regulations indicated in the certification statement and has been designed and constructed to comply with those regulations.

**certification of labor union**

Declaration by a labor board (such as the National Labor Relations Board) that a union is the bargaining agent for a group of employees.

**certification of public road mileage**

An annual document (certification) that must be furnished by each state to the Federal Highway Administration (FHWA) certifying the total public road mileage (kilometers) in the state as of December 31 of the preceding year.

**certification to federal court**

Method of taking a case from the U.S. Court of Appeals to the Supreme Court in which the former court may certify any question of law in any civil or criminal case as to which instructions are requested.

**certified**

(1) *Equipment*. Equipment is considered "certified" if it a) has been tested and found by a nationally recognized testing laboratory to meet nationally recognized standards or to be safe for use in a specified manner, or b) is of a kind whose production is periodically inspected by a nationally recognized testing laboratory, and c) it bears a label, tag, or other record of certification. (2) *Personnel*. Persons who have met a professional evaluation process or standard (e.g., by examination, experience, education, etc.) of a specific certification agency or authority to receive the designation of "certified."

**certified capacity**

The capability of a pipeline project to move gas volumes on a given day, based on a specific set of flowing parameters (operating pressures, temperature, efficiency, and fluid properties) for the pipeline system as stated in the dockets filed (and subsequently certified) in the application for the Certificate of Public Convenience and Necessity at the Federal Energy Regulatory Commission. Generally, the certificated capacity represents a level of service that can be maintained over an extended period of time and may not represent the maximum throughput capability of the system on any given day. *See also design capacity.*

**certified carriers**

Carriers using highways of a state to whom certificates of public convenience and necessity have been issued.

**certified gas-free**

When a tank, compartment, or container on a vessel is certified gas-free it means that it has been tested using an approved testing instrument, and proved to be sufficiently free, at the time of the test, of toxic or explosive gases for a specified purpose, such as hot work, by an authorized person and that a certificate to this effect has been issued.

**certified glazing**

*Railroad*. A glazing material applied to railroad passenger car windows that has been certified by the manufacturer as having met the testing requirements set forth in Appendix A of 49 CFR 223 and that has been installed in such a manner that it will perform its intended function.

**Certified Health Physicist (CHP)**

An individual who has been certified in this discipline by the American Board of Health Physicists.

**Certified Industrial Hygienist (CIH)**

An industrial hygienist who has met the education, experience, and examination requirements of the American Board of Industrial Hygiene and possess current ABIH certification as an industrial hygienist (i.e., has been certified as competent in one or more aspects of this discipline by the American Board of Industrial Hygiene).

**Certified Safety Professional (CSP)**

A professional safety practitioner who has been certified in one or more aspects of this discipline by the Board of Certified Safety Professionals.

**cerumen**

A waxy secretion of the glands of the external acoustic meatus; ear wax.

**cervical**

Pertaining to the neck or to the cervix.

**cervical spine**

That portion of the spinal column consisting of the seven cervical vertebrae in the neck.

**cervicale**

The protruding tip of the 7th cervical vertebrae at the base of the neck. Also known as the nuchale tubercle.

**cervicale height**

The vertical linear distance from the upper sitting surface to cervicale. Measured with the individual sitting erect. *See also [cervicale](#).*

**cervix**

A constricted structure in the body, typically referring to the neck or the narrow part of the uterus.

**cesium**

A chemical element, atomic number 55, atomic weight 132.905, symbol Cs.

**cesspool**

A covered tank with open joints constructed in permeable soil to receive raw domestic wastewater and allow partially treated effluent to seep into the surrounding soil, while solids are contained and undergo digestion.

**CET**

Certified Environmental Trainer. *See also [corrected effective temperature](#).*

**CFB**

Circulating fluidized bed.

**CFC**

*See [chlorofluorocarbon](#).*

**cfm**

*See [cubic feet per minute](#).*

**cfm/sq ft**

Cubic feet per minute per square foot.

**CFR**

*See [Code of Federal Regulations](#).*

**cfs**

Cubic feet per second.

**CFU**

*See [colony-forming units](#).*

**CFU/m<sup>3</sup>**

Colony-forming units per cubic meter.

**CGA**

*See [Compressed Gas Association](#).*

**CGI**

*See [combustible gas indicator](#).*

**CGMP**

Current good manufacturing practice.

**CGS System**

*See [centimeter-gram-second system](#). *See also [basic units](#).**

**chafe**

To irritate the skin through friction.

**chafed**

Wear damage resulting from friction between two parts rubbed together with limited and usually repeated motion.

**chaff**

*Aviation.* Thin, narrow metallic reflectors of various lengths and frequency responses, used to reflect radar energy. These reflectors, when dropped from aircraft and allowed to drift downward, result in large targets on the radar display.

**chafing**

Irritation of the skin by friction, usually from clothing or the rubbing together of body surface, such as the thighs, when they are damp with perspiration.

**chain and flight collector**

A sludge collector mechanism utilized in rectangular sedimentation basins or clarifiers.

**chain of custody**

In legal terms, regulatory agencies as well as employers must be able to verify the chain of possession and custody of any physical samples (air, water, soil, biological, etc.) that may be used to support litigation. Procedures to ensure this chain-of-custody include written records that can be used to trace possession and handling of the sample from its point of origin through analysis and its introduction as evidence. Without a continuous record of chain-of-custody, the validity of any sample or the results of any tests/analyses may be questioned.

**chain of custody form**

A form used for tracking samples from the time the samples are obtained, through their transportation, receipt at the laboratory, and analysis.

**chain of infection**

A series of related factors or events that must occur before an infection will occur. These factors can be identified as host, agent, source, and transmission factors.

**chain of title**

Record of successive conveyances, or other forms of documentation, affecting a particular parcel of land, arranged consecutively, from the government or original source of title down to the present holder.

**chain reaction**

(1) In chemical or nuclear processes, the energy or byproducts released cause a continuation of the process. (2) In the analysis of accident cause, the sequence of events that resulted in the accident. *See also domino effect.*

**chains and links**

As used in real estate measurement, chain is equal to 66 feet long or 100 links.

**chair**

(1) *General.* A place for sitting. (2) *Administration.* The person designated as "in charge" or responsible for the actions and output of a committee or group. (3) *Transportation.* *See sidecar.*

**chalazion**

A cyst or tumor on the eyelid caused by an infection of a sebaceous (oil) gland. A chalazion can sometimes be treated at home with the application of hot compresses, but while this method is usually successful with a sty, a similar infection that has not yet formed a cyst, chalazion often requires incision and drainage be performed by a physician. Also called *meibomian cysts*.

**challenge**

To object or take exception to; to proffer objections to a person, right, or instrument; to question formerly the legality or legal qualifications of; to invite into competition; to formerly call into question the capability of a person for a particular function, or the existence of a right claimed, or the sufficiency of validity of an instrument; to call or put in question; to put into dispute; to render doubtful.

**chamfer**

The bevel at the end of an object.

**chance**

The absence of explainable or controllable causation; accident; fortuity; hazard; result or issue of uncertain and unknown conditions or forces; risk; unexpected, unforeseen, or unintended consequences of an act.

**chance variable**

*See random variable.*

**change of grade**

Usually understood as an elevation or depression of the surface of a street, or a change of the natural contour of its face so as to facilitate travel over it.

**change of venue**

The removal of a suit begun in one county or district to another county or district for trial, though the term is also sometimes applied to the removal of a suit from one court to another court of the same county or district. In criminal cases, a change of venue will be permitted if, for example, the court feels that the defendant cannot receive a fair trial in a given venue because of prejudice.

**changeover**

The process of modifying or replacing an existing workstation, workplace, or other facility, including the setup and tear-down.

**changeover allowance**

A special time allowance given a worker to compensate for the changeover time. *See also setup allowance and tear-down allowance.*

**changeover time**

That temporal period required to affect a changeover.

**channel**

The bed in which the main stream of a river flows, rather than the deep water of the stream as followed in navigation. The deeper part of a river, harbor, or strait. It may also be used as a generic term applicable to any water course, whether a river, creek, or canal. The channel of a river is to be distinguished from a branch.

**channel bottom**

Project depth or grade elevation.

**channel capacity**

The maximum rate at which information can be received, transmitted, or processed at a given point, for either the human or instrumentation.

**channel gradient**

The slope of the water surface of a stream channel through the bridge site to the nearest one tenth of a percent.

**channel meander**

An unstable river channel that changes its location after high water periods.

**channel report**

A report of channel conditions, soundings, etc. found by an aids-to-navigation tender on routine patrol; includes report of courses steered. The channel report is issued only for open rivers and is written in pilots' jargon.

**channel width**

The upstream channel width (bank to bank dimensions of the defined channel, not the flood plain) at a bridge site; to the nearest foot.

**channeling**

A condition that occurs in a filter or other packed bed when water finds furrows or channels through which it can flow without effective contact with the bed.

**channelization**

The process of straightening and deepening streams so water will move faster. A flood-

reduction or marsh-drainage tactic that can interfere with waste assimilation capacity and disturb fish and wildlife habitats.

**channoine weir**

A section of a dam, built in the form of a spillway, lying between the anchor weir proper on the land side of a lock wall and the bear trap which is adjacent to the navigable path.

**character**

(1) The aggregate of the moral qualities which belong to and distinguish an individual person; the general result of one's distinguishing attributes. (2) An image of a letter or symbol appearing on a video display terminal or in printed media.

**character evidence**

Evidence of an individual's moral standing in a community based upon reputation.

**character height**

The vertical distance assigned to or occupied by a character on a display.

**character of vessel**

The type of service in which the vessel is engaged at the time of carriage of a hazardous material.

**character width**

The horizontal distance on a line of text from one point of one character to a corresponding point of the next character.

**characteristic hazardous waste**

Any one of four categories used in defining hazardous waste: ignitability, corrosivity, reactivity, and toxicity.

**characteristics of easy movement**

*See motion efficiency principals.*

**charcoal tube (CT)**

A glass tube of specified dimensions and assembly, containing 100 mg of 20/40 mesh activated coconut shell charcoal in a front section and 50 mg in a backup section. Larger tubes are available.

**charge density**

In a polyelectrolyte, the mole ratio of the charged monomers to non-charged monomers.

**charge it**

*Transportation (slang).* To let brake air flow into semitrailer lines.



**Charles's law**

The volume of a mass of gas is directly proportional to the absolute temperature, provided the pressure remains the same.

**charley horse**

A minor muscle disorder resulting from the violent use of a muscle or group of muscles in strenuous work or play. It usually occurs when muscles that have not been conditioned for hard use are put under a strain, with the result that some of the muscle fibers are strained or may actually tear. It is characterized by soreness, stiffness, and pain which often comes on very suddenly.

**chart**

Any form of graphical or tabular data which provides information about one or more variables or activities.

**chart recorder**

See *oscillograph, kymograph, and polygraph*.

**charted visual flight procedure approach**

An approach wherein a radar-controlled aircraft on an Instrument Flight Rules (IFR) Flight plan, operating in Visual Flight Rules (VFR) conditions and having an Air Traffic Control (ATC) authorization, may proceed to the airport of intended landing via visual landmarks and altitudes depicted on a charted visual flight procedure.

**charted visual flight rules (VFR) flyways**

Flight paths recommended for use to bypass areas heavily traversed by large turbine-powered aircraft. Pilot compliance with recommended flyways and associated altitudes is strictly voluntary. Visual Flight Rules (VFR) flyway planning charts are published on the back of existing VFR terminal area charts.

**charter bus**

A bus transporting a group of persons who pursuant to a common purpose, and under a single contract at a fixed price, have acquired the exclusive use of a bus to travel together under an itinerary.

**charter party**

Contract between the owner of a vessel and a shipper for letting of the vessel or a part thereof.

**charter service**

(1) A commercial passenger vehicle trip not scheduled, but specially arranged. The char-

ter contract normally commits the carrier to furnish the agreed to transportation service at a specified time between designated locations.

(2) A vehicle hired for exclusive use that does not operate over a regular route, on a regular schedule and is not available to the general public.

**charter service hours**

The total hours traveled/operated by a revenue vehicle while in charter service. Charter service hours include hours traveled/operated while carrying passengers for hire, plus associated deadhead hours.

**charter transportation of passengers**

Transportation, using a bus, of a group of persons who pursuant to a common purpose, under a single contract, at a fixed charge for the vehicle, have acquired the exclusive use of the vehicle to travel together under an itinerary either specified in advance or modified after having left the place of origin.

**chase**

*Aviation.* An aircraft flown in proximity to another aircraft normally to observe its performance during training or testing.

**chassis**

(1) The load-supporting frame in a truck or trailer, exclusive of any appurtenances which might be added to accommodate cargo. (2) A frame with wheels and container locking devices in order to secure the container for movement. See also *body*.

**chassis cab**

An incomplete vehicle consisting of a cab on a bare frame rail chassis, needing a body or load platform in order to become complete.

**cheater bar**

See *breakdown bar*.

**check**

(1) A mental skill involving the comparison of a finished product with what was planned to verify if the goals were met or standards achieved. (2) A written promise from one party to another ensuring financial reimbursement to the second party.

**check line**

*Maritime.* A line used to help check a boat's headway when landing or entering a lock.

**check post**

*Maritime.* A mooring bit on a lock wall.

**check study**

A timing review of a job to evaluate the appropriateness of the standard time for that job.

**check time**

The time period between the start time of a time study and the beginning of the first work element observed or between the completion of the last element and the stop time of the study.

**check valve**

A valve that opens in the direction of normal flow and closes with flow reversal.

**checked baggage**

Baggage accepted by the air carrier for transportation in the hold of the aircraft.

**checkoff**

The withholding of union dues from a worker's paycheck by agreement.

**cheek**

(1) The tissue comprising the side of the face from the zygomatic bone to the mandible. (2) Slang term commonly used for a buttock.

**cheekbone**

*See zygomatic bone.*

**cheilion**

The lateral corner of the mouth opening formed by the junction of the lips.

**chelate**

A chemical compound in which a metallic ion is combined with a molecule with multiple chemical bonds.

**chelating agent**

A type of organic sequestering agent that reduces water hardness and inactivates certain metal ions in water. Sometimes used in detergent formulations to reduce the effects of metals in water.

**chelation**

A treatment that removes harmful substances from the body. The chelating agent bonds to the contaminant which, due to the resulting poor absorption, is excreted from the body.

**Chemical Abstract Service (CAS)**

A numerical index listing chemical compounds and substances, each with its own distinct CAS identification number.

**chemical agent**

A hazardous substance, chemical compound, or mixture of these.

**chemical analysis**

Any form of examination through the use of chemicals, as in blood tests to determine a person's sobriety, the presence of drugs, etc.

**chemical asphyxiant**

A substance that chemically interferes with the respiratory process. There may be sufficient atmospheric oxygen present, but the body is unable to utilize it because the physiological mechanism for use and transport of oxygen is blocked (such is the case with carbon monoxide).

**chemical burn**

The tissue damage or destruction occurring as a direct result of chemical exposure.

**chemical cartridge respirator**

An air-purifying respirator capable of filtering out chemical contaminants from the air that is breathed. It usually acts through the use of chemical sorbent pads encased in cartridges that are attached to the respirator facepiece.

**chemical compound**

A substance composed of two or more elements combined in a fixed and definite proportion by weight.

**chemical dosimeter**

A self-indicating device for determining total (or accumulated) radiation exposure dose based on color change accompanying chemical reactions induced by the radiation.

**chemical element**

The smallest substance into which some physical or chemical entity can be chemically divided and still retain its chemical properties.

**chemical emergency**

An occurrence, such as a transportation accident, equipment failure, container rupture, or control equipment failure, that results in an uncontrollable release of a hazardous chemical into the environment or work place.

**chemical feeder**

A device used to dispense chemicals at a predetermined rate.

**chemical fixation**

The transformation of a chemical compound to a new, nontoxic form.

**Chemical Hygiene Plan (CHP)**

Part of a laboratory safety plan which must be established by laboratories handling hazardous chemicals due to a set of requirements mandated by OSHA.

**chemical manufacturer**

A person or business who imports, produces, or manufactures a chemical substance.

**Chemical Manufacturers Association (CMA)**

An Association of chemical product manufacturers that disseminates information on the safe handling, transportation, and use of chemicals. In addition, it develops labeling guidelines and provides medical advice on the prevention and treatment of chemical injuries.

**chemical oxygen demand (COD)**

A measure of the oxygen required to oxidize all compounds in water, both organic and inorganic.

**chemical pneumonitis**

Pneumonitis or inflammation of the lung parenchyma as a result of the aspiration of a hydrocarbon solvent which spreads rapidly as a film over the lung's surfaces. The inhalation of beryllium or cadmium fumes or dust can cause an acute pneumonitis.

**chemical protective clothing**

Clothes made from various materials that exhibit chemical-resistant properties to an offending agent.

**chemical reaction**

A change in the arrangement of atoms or molecules to yield substances of different composition and properties.

**chemical sludge**

Sludge resulting from chemical treatment processes of inorganic wastes that are not biologically active.

**chemical substance**

Any organic or inorganic substance of a particular molecular identity, including any combination of such substances occurring in whole or in part as a result of a chemical reaction or occurring in nature; and any element or uncombined radical.

**Chemical Transportation Emergency Center (CHEMTREC)**

A section of the Chemical Manufacturers Association that provides emergency response

information upon request to control an emergency.

**chemical treatment**

Any one of a variety of technologies that use chemicals or a variety of chemical processes to treat waste.

**chemical waste**

The waste generated by chemical, petrochemical, plastic, pharmaceutical, biochemical, or microbiological manufacturing processes.

**chemicals of potential concern**

Chemicals that are potentially site related and whose data are of sufficient quality for use in the quantitative risk assessment of that site.

**chemiluminescence**

The emission of absorbed energy as light, due to a chemical reaction of the compounds of the system. This principle is employed in some instruments for determining the airborne concentration of some substances (e.g., ozone).

**chemiluminescence detector**

A detector that is designed to detect light produced in chemical reactions, such as that between ozone and ethylene or nitric oxide. This phenomenon is employed in determining ambient levels of ozone and oxides of nitrogen.

**chemisorption**

The formation of an irreversible chemical bond between the sorbate molecule and the surface of the adsorbent.

**chemistry**

The area of science that deals with the elements and atomic structure of matter and the compounds of the elements.

**chemoreceptor**

A portion of a large protein or other cellular molecule which has the three-dimensional capacity for accepting and/or binding to a specific chemical substance.

**chemosterilant**

A chemical that controls pests by preventing reproduction.

**chemosurgery**

The destruction of tissue by chemical agents; originally applied to chemical fixation of malignant, gangrenous, or infected tissue, with

use of frozen sections to facilitate systematic microscopic control of its excision.

**chemotaxis**

The response of an individual toward a chemical stimulus.

**chemotherapy**

The treatment of illness by chemical means; that is, by medication. The term was first applied to the treatment of infectious diseases, but it now is used to include treatment of mental illness and cancer with drugs.

**chemotrophs**

Organisms that extract energy from organic and inorganic oxidation/reduction reactions.

**CHEMTREC**

See *Chemical Transportation Emergency Center*.

**chest**

The thorax.

**chest breadth**

The horizontal linear width of the torso without tissue compression at the nipple level (males) and at the level where the fourth rib meets the sternum (females). Measured with the individual standing erect with the arms hanging naturally at the sides, and breathing normally.

**chest breadth to bone**

The horizontal linear width of the torso at the nipple level with tissue compression. Measured with the individual standing erect, and breathing normally.

**chest/bust circumference**

See *chest circumference*.

**chest/bust depth**

See *chest depth*.

**chest circumference**

The surface distance around the torso at the nipple level. Measured with the individual standing erect, breathing normally, and with arms slightly abducted. Also referred to as *chest/bust circumference*.

**chest circumference at scye**

The surface distance around the torso at the level of the axillary folds. Measured with the individual standing erect.

**chest circumference below bust**

Term applies to females only. The surface distance around the chest just below the cups of the bra. Measured with the individual standing erect and breathing normally.

**chest depth**

The anterior-posterior horizontal linear depth of the torso measured at the nipple level (males) and above the breasts at the level where the fourth rib joins the sternum (females). Measured with the individual standing erect, the arms hanging naturally at the sides, and breathing normally. Also known as the *chest/bust depth*.

**chest depth at scye**

The anterior-to-posterior horizontal linear depth of the torso measured at the scye level. Measured with the individual standing erect and breathing normally.

**chest depth below bust**

The transverse depth of the chest at the level of the inferior margin of the xiphoid process. Measured with the individual standing erect and breathing normally.

**chest height**

The vertical distance from the floor to the center of the nipples (males) or point of the bra (females). Measured with the individual standing erect and his/her weight balanced on both feet. See also *bust point height*.

**chest skinfold**

See *pectoral skinfold*.

**Cheyne-Stokes respiration**

A form of respiration in which the individual appears to have stopped breathing for 40 to 50 seconds, then breathing starts again with increasing intensity, then stops as before, and then repeats the previous breathing rhythm.

**CHI**

See *Comfort-Health Index and computer-human interface*.

**chi square ( $X^2$ )**

A statistical test using differences in frequency data, especially for small samples, based on obtained vs. theoretical/expected frequency counts, to determine significance. Also referred to as *chi square test*. Represented by the formula:

$$\chi^2 = \sum_{i=1}^n \frac{(f_o - f_t)^2}{f_t}$$

where:

$f_o$  = observed frequency

$f_t$  = theoretical or expected frequency

$n$  = sample size

### chi square distribution

A mathematical or graphical function for chi square, having the probability distribution function

$$f(\chi^2) = G_v(\chi^2) \frac{(v-2)^{\frac{v-2}{2}}}{2} e^{-\frac{\chi^2}{2}}$$

where:

$v$  = degrees of freedom

$G_v$  = a constant for a given  $v$

Note: The shape of the distribution varies with degrees of freedom, approaches the normal distribution as degrees of freedom increase.

### chi square test

See *chi square*.

### Chicago grips

A colloquial term used for a wire come-along used in hoisting wire rope.

### chicane

A plow or other obstacle used on a belt thickener or belt press to mix or turn sludge to facilitate sludge dehydration.

### chicken board

See *crawling board*.

### chief hood lifter

*Transit (slang)*. Garage superintendent.

### chigger

The so-called red-bug or larva of the mite family *Trombiculidae* whose bite produces a welt with itching and dermatitis.

### chilblain

A localized painful erythema of the fingers, toes, or ears produced by excessive exposure to cold. The basic cause of chilblain is sensitivity to cold, sometimes resulting from circulatory disturbances, which may be corrected in part by exercise and proper diet; severe cases require medical attention. Extreme heat or cold applications should not be applied directly to chilblains. This condition should not

be confused with frostbite, another type of skin damage caused by exposure to cold.

### child

An individual younger than the age of puberty.

### chill

A feeling of cold, with convulsive shaking of the body. A true chill, or rigor, results from an increase in chemical activity within the body and usually ushers in a considerable rise in body temperature. The pallor and coldness of a chill, and the goose flesh that often accompanies it, are caused by constriction of the peripheral blood vessels. Chills are symptomatic of a wide variety of diseases. They usually do not accompany well-localized infections.

### chilling effect

The lowering of the Earth's temperature because of an increased level of particles in the air blocking the sun's rays. See also *greenhouse effect*.

### chime

The act of turning a cylindrical container on the edge of its base to assist in moving it from one location to another.

### chimney effect

The tendency of air or gas in a vertical passage to rise when it is heated because its density is lower than the surrounding air or gas.

### chin

The anterior lower part of the jaw, including the anterior lower portion of the mandible and all surrounding tissues.

### chin prominence to wall

The horizontal distance from the wall to the most anterior protrusion of the chin. Measured with the individual standing erect with his back and head against the wall, facing straight ahead.

### chin strap

Any thin, flexible, strong material or device which is attached to headgear and can be passed underneath the chin for aiding in headgear retention.

### Chinese restaurant disease

Often called the *Chinese restaurant illness* or syndrome, this condition is due to the ingestion of large amounts of food containing *monosodium glutamate (MSG)*, a flavoring

additive. Symptoms include headaches, tightness in the face, and lightheadedness.

**Chinese wall**

A fictional device used as a screening procedure which permits an attorney involved in an earlier adverse role to be screened from other attorneys in the firm so as to prevent disqualification of the entire law firm simply because one member of the firm previously represented a client who is now an adversary of the client currently represented by the firm.

**Chinook**

A warm, dry wind on the eastern side of the Rocky Mountains. In the Alps, this wind is called a *Foehn*.

**Chinook wall cloud**

A bank of clouds over the Rocky Mountains that signifies the approach of a Chinook.

**chiropractic**

A method of detecting and correcting by manual or mechanical means structural imbalance, distortion, or subluxations in the human body to remove nerve interference where such is the result of or related to distortion, misalignment, or subluxations of or in the vertebral column. A system of therapeutic treatment, through adjusting of articulations of the human body, particularly those of the spine. The specific science that removes pressure on the nerves by the adjustment of the spinal vertebrae.

**chloracne**

A disfiguring skin condition noted among workers who have had significant contact with certain chemicals such as chlorinated diphenyls, chlorinated dioxins, and chlor-naphthalenes.

**chloramines**

Disinfecting compounds of organic or inorganic nitrogen and chlorine.

**chloride**

A salt of hydrochloric acid; any binary compound of chlorine in which the latter carries a negative charge of electricity.

**chlorinated**

(1) The condition of water or wastewater that has been treated with chlorine. (2) A description of an organic compound to which chlorine atoms have been added.

**chlorinated hydrocarbons**

These include a class of persistent, broad-spectrum insecticides that linger in the environment and accumulate in the food chain. Among them are DDT, aldrin, dieldrin, heptachlor, chlordane, lindane, endrin, mirex, hexachloride, and toxaphene.

**chlorinated solvent**

An organic solvent containing chlorine atoms such as methylene chloride and trichloromethane.

**chlorination**

The application of chlorine to drinking water, sewage, or industrial waste to disinfect or to oxidize undesirable compounds. Liquid chlorine has been found to be the most effective water disinfectant, and is almost invariably used in the United States for the purification of both public water supplies and swimming pools. This addition of chlorine is harmless, since enough chlorine to affect the health of those using the chlorinated water would also make the water too unpalatable to drink.

**chlorinator**

A metering device used to add chlorine to water or wastewater.

**chlorine**

A gaseous chemical element, atomic number 17, atomic weight 35.453, symbol Cl. It is a disinfectant, bleaching agent, and irritant poison. It is used for disinfecting, fumigating, and bleaching, either in an aqueous solution or in the form of chlorinated lime.

**chlorine contact chamber**

A detention chamber to diffuse chlorine through water or wastewater while providing adequate contact time for disinfection.

**chlorine demand**

The difference in the amount of chlorine added to a water or wastewater and the amount of residual chlorine remaining after a specific contact duration, usually 15 minutes.

**chlorine residual**

The amount of chlorine remaining in water after application at some prior time. *See also free chlorine residual.*

**chlorine tablets**

Common term for pellets of solidified chlorine compounds such as calcium hypochlorite used for water disinfection.

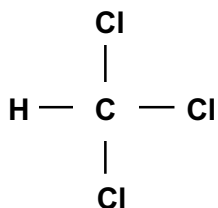


**chlorofluorocarbons (CFC)**

A family of inert, nontoxic, and easily liquefied chemicals used in refrigeration, air conditioning, packaging, insulation, or as solvents and aerosol propellants. Because CFCs are not destroyed in the lower atmosphere, they drift into the upper atmosphere where their chlorine components destroy the ozone.

**chloroform**

A colorless, mobile, highly reactive, volatile liquid with a characteristic sweet odor and taste. It is used in industry as a solvent, as a cleansing agent, in the manufacture of refrigerant, and in fire extinguishers. It is also used in the manufacture of fluorocarbon plastics, in analytical chemistry, as a fumigant, and an insecticide. In the past, it was used extensively as an anesthetic. However, due to its toxic effects, this use has been abandoned. It is represented by the formula  $\text{CHCl}_3$  and the structure:

**chlorophyll**

The green photosynthetic pigment contained in many vegetable organisms.

**chloropsia**

A defect of vision in which objects appear green.

**chlorosis**

Discoloration of normally green plant parts that can be caused by disease, lack of nutrients, or various air pollutants.

**choice reaction time (CRT)**

That temporal interval measured for an individual or group after the presentation onset of one or a group of stimuli to decide which of more than one possible responses is appropriate and initiate that response. Generally represents an average time over several trials.

**chokes**

A form of decompression sickness in which a choking sensation, difficult breathing, and/or substernal pain are experienced due to air bubbles in the lungs.

**cholalic acid**

An acid formed in the liver from cholesterol that plays, with other bile acids, an important role in digestion.

**cholecystic**

Pertaining to the gallbladder.

**cholera**

Highly infectious disease of the gastrointestinal tract caused by waterborne bacteria.

**cholesterol**

The principal animal sterol, occurring in faintly yellow, pearly leaflets or granules in all animal tissues. Research has suggested the possibility that eating foods high in cholesterol may be a contributing factor in heart and circulatory disease, particularly in the formation of fatty deposits in the arteries (atherosclerosis).

**cholinesterase**

(1) An enzyme that hydrolyzes acetylcholine within the central nervous system. This enzyme can be depressed following exposure to organophosphate pesticide compounds. Workers using organophosphate pesticides should be routinely monitored for cholinesterase levels. (2) An enzyme that splits acetylcholine into acetic acid and choline. This enzyme is present throughout the body, but is particularly important at the myoneural junction where the nerve fibers terminate and become embedded in muscle fibers. Acetylcholine, which is formed when a nerve impulse reaches a myoneural junction, acts as a stimulant to the muscle fibers, causing them to contract. Immediately after acetylcholine has sparked a contraction it must be removed so that the muscle fiber will repolarize, or recharge itself; otherwise, it would not be ready to contract the next time it is stimulated. Cholinesterase performs this service by splitting acetylcholine into its components, thus rendering it ineffective.

**cholinesterase inhibition**

The loss or decrease of enzymatic activity of cholinesterase caused by binding of the enzyme with another chemical.

**chorea**

A movement disorder in which a series of complex, involuntary writhing movements are made, generally involving distal extremities and/or the face, tongue, and swallowing mus-

cles. See also *Huntington's chorea*, *Sydenham's chorea*.

**choreologist**

One who has been trained and is competent to record human movement in some system of notation.

**CHP**

See *Certified Health Physicist* and/or *Chemical Hygiene Plan*.

**CHRIS**

Chemical Hazard Response Information System.

**chroma**

That apparent degree to which a color compares to a similarly illuminated white or achromatic reference. See also *Munsell chroma*.

**chromate**

A salt of chromium trioxide (chromic acid).

**chromatic**

Having a hue; colored; pertaining to any color except white, black, or gray.

**chromatic aberration**

An image containing colored fringes around the border, resulting from unequal refraction of light of different wavelengths causing focusing at different points in an optical lens system.

**chromatic adaptation**

That modification of the color sensory properties of the visual system by observing colored stimuli.

**chromatic audition**

See *chromatism*.

**chromatic contrast**

That apparent contrast due to the presence of differing adjacent hues or colors. Synonymous with *color contrast*, *hue contrast*, and *simultaneous color contrast*. See also *luminance contrast*.

**chromatic contrast threshold**

That minimal difference in the combined aspects of luminance and chromaticity which is detectable for a given pair of adjacent stimuli. Also referred to as *color contrast threshold*.

**chromatic diagram**

See *chromaticity diagram*.

**chromatic vision**

See *photopic vision*.

**chromaticity**

A measure of the quality of colored light, defined either by its chromaticity coordinates or by its dominant wavelength and excitation purity. Luminance or brightness is not involved.

**chromaticity coordinate**

Any of a set of numbers representing the proportions of two of the three normalized primary colors, usually *x* and *y*, required to produce a given color, with the brightness variable eliminated. Synonymous with *trichromatic coefficients* and *CIE chromaticity coordinates*. See also *CIE color system*. Represented by the formula (represented by *x*, *y*, *z* in the CIE system):

$$x = \frac{X}{X+Y+Z} \quad y = \frac{Y}{X+Y+Z} \quad z = \frac{Z}{X+Y+Z}$$

**chromaticity diagram**

A planar diagram based on the CIE color system and produced by using two of the chromaticity coordinates as axes in a rectangular coordinate system. Also referred to as *chromatic diagram*.

**chromaticness**

A visual attribute in which a perceived color appears more or less chromatic.

**chromatin**

The more readily stainable portion of a cell nucleus.

**chromatism**

Sensing an image of color when stimulated by a sensory modality other than vision. Synonymous with *chromatic audition*. See also *synesthesia*.

**chromatogram**

For the differentiating type detector, which is the most common type in a gas chromatograph instrument, the chromatogram is a graphical presentation corresponding to the components present in the sample introduced into the instrument. The elapsed time from sample injection to each peak is a means to identify the components in the sample. The area under each peak is proportional to the total mass of that component in the sample. The chromatogram for the integrating type detector is a series of plateaus with each pla-

teau proportional to the total mass of the component in the eluted zone.

#### **chromatographic detector**

There are two types of chromatographic detectors: the differentiating type and the integrating type. The *integrating type* detector gives a response proportional to the total mass of the component in the eluted zone. The *differentiating type* gives a response proportional to the concentration or mass flow rate of the eluted component.

#### **chromatography**

A practical analytical methodology involving the separation of complex mixtures and the detection of each component of the mixture.

#### **chrominance**

The coloring power of a stimulus.

#### **chromium**

A chemical element, atomic number 24, atomic weight 51.996, symbol Cr.

#### **chromosome**

One of the thread-like bodies (normally 46 in humans) of chromatin that are found in the nucleus and that are the bearers of genes.

#### **chromosphere**

The sun's atmosphere just above the photosphere.

#### **chromostereopsis**

See *color pseudo-stereopsis*.

#### **chronic**

With reference to disease, of long duration, or characterized by slowly progressive symptoms. Deep-seated or obstinate, or threatening a long continuance.

#### **chronic alcoholism**

A medically diagnosable disease characterized by chronic, habitual, or periodic consumption of alcoholic beverages resulting in substantial interference with an individual's social or economic functions in the community, and/or the loss of self-control with respect to the use of such beverages.

#### **chronic carrier**

A person who continues to harbor an infectious agent without showing symptoms of the disease. Chronic carriers are possible in many illnesses. Salmonellosis is an example.

#### **chronic disease**

Long-lasting, persistent, prolonged, repeated, or frequently recurring over a long period.

#### **chronic effect**

An effect which is the result of exposure to a toxic substance over a long period. The daily dose is insufficient to elicit an acute response, but it may have a cumulative effect over a period of time. Oftentimes, the rate of absorption of the toxic agent exceeds the rate of elimination, thereby resulting in a buildup of the substance in the body.

#### **chronic exposure**

(1) *Chemical*. Continual exposure to low levels of a chemical over a long period of time (usually 3 years or more), which can produce symptoms and disease. (2) *Radiation*. Exposure to radiation for long duration by fractionation or protraction. Generally, any dosage absorbed over a 24-hour period or longer.

#### **chronic oxygen poisoning**

See *chronic oxygen toxicity*.

#### **chronic oxygen toxicity**

A lung disorder due to breathing higher than normal oxygen partial pressures at normal barometric pressure for 24 hours or more and characterized by chest pain, pulmonary edema, and possibly damage to the alveoli and bronchi. Also known as chronic oxygen poisoning. See also *acute oxygen toxicity*.

#### **chronic RfDs**

An estimate (with uncertainty spanning perhaps an order of magnitude or greater) of a lifetime daily exposure level for the human population, including sensitive subpopulations, that is likely to be without an appreciable risk of deleterious effects. Chronic RfDs are specifically developed to be protective for long-term exposure to a compound (7 years to lifetime).

#### **chronic toxicity**

The capacity of a substance to cause long-term poisonous human health effects.

#### **chronic toxicity test**

Test method used to determine the concentration of a substance that produces an adverse effect on a test organism over an extended period of time.

**chronobiology**

The study of the effects of time on varying biological systems, including psychobiological rhythms.

**chronocyclegram**

See *chronocyclegraph*. May also be known as *chronocyclogram*.

**chronocyclegraph**

The single negative or photograph from a chronocyclegraphic measurement; also *chronocyclograph*.

**chronocyclography**

The use of a motion tracking system comprised of (a) one or more small electric light bulbs which flash at known, regular intervals and are attached to the fingers or other body part and (b) a still camera, ideally using a stereoscopic camera to obtain three-dimensional data, for recording motions on a single negative or print to determine velocities and accelerations of the body parts. Typically the subject is in a darkened area; the exposure time is greater than or equal to one motion cycle. Also referred to as *chronocyclography*. See also *cyclegraphy*.

**chronograph**

A constant-speed recording device which marks a paper or tape at known intervals so that timing during an ongoing process can be determined. Also referred to as *marstochron* and *marstograph*.

**chronological age**

The age as of the previous birthday or the age as of the previous birthday plus 0.5 years. See also *developmental age* and *mental age*.

**chronological study**

The observation and recording of events or data in the order in which they occur over time.

**chrysotile asbestos**

Asbestiform mineral in the serpentine group that has been used as an insulation material in buildings. It is referred to as white asbestos and is the type that has been the most widely used in the U.S.

**chunk**

Differential housing on powered axles.

**chute**

(1) Section of a river that is narrower than ordinary and through which the river current

increases, often navigable from bank to bank.  
(2) A narrow sloping passage by which water falls or flows to a lower level (between an island and a bank).

**chyle**

The product of intestinal digestion absorbed into the lymphatic system through the lacteals and conveyed through the thoracic duct to empty into the venous system at the root of the neck.

**chyme**

The semi-liquid mass into which food is converted by the action of gastric secretions during the digestive process.

**CIA**

See *Central Intelligence Agency*.

**cicatrix**

The mark left in the flesh or skin after healing of a wound and having the appearance of a seam or of a ridge of flesh.

**CID**

See *cubic inch displacement*.

**CIE**

Commission Internationale de l'Eclairage. See *CIE color system*.

**CIE color rendering index (CRI)**

A measure of the amount of color shift which an object appears to present when illuminated by one source compared to that of a reference source having similar color temperature.

**CIE color system**

A standard color reference system established in 1931 by the Commission Internationale de l'Eclairage (CIE) based on the technique of flicker photometry and using a chromaticity diagram to specify color coordinates. Generally considered the world standard.

**CIE Standard Observer**

A table representing an observer having normal color vision which is developed from experimental data in color-matching using the primary colors with a 2° field of view. Also referred to as *standard observer* and *2° observer*. See also *CIE Supplemental Standard Observer*.

**CIE Standard Observer response curve**

See *spectral luminous efficiency function*.

**CIE Supplementary Standard Observer**

A variant of the CIE Standard Observer adopted in 1964 which accommodates a 10° field of view and permits better judgment of color matching in the shorter wavelengths (blue, violet). Also referred to as *10° observer*.

**CIF**

See *cargo insurance and freight*. See also *Cost, Insurance, Freight*.

**CIH**

See *Certified Industrial Hygienist*.

**CIIT**

Chemical Industry Institute of Toxicology.

**cilia**

Short, tiny, hair-like processes on the surface of protozoan or certain metazoan cells that, by their constant motion, accomplish locomotion or produce a water current. Examples are found in the bronchi and respiratory tract where they aid in the removal of dusts.

**ciliary muscle**

An intrinsic smooth muscle of the eye, which is involved in lens accommodation.

**CIM**

See *computer-integrated manufacturing*.

**cinema verité**

The use of only naturally available, not additional photographic, lighting for photography or videography.

**cinematography**

Motion picture photography.

**CIR**

See *Crash Injury Research project*.

**circadian**

Having a period of approximately 24 hours.

**circadian pacemaker**

An internal timing mechanism which maintains circadian rhythms. See also *internal clock* and *biological rhythm*.

**circadian rhythm**

A biological activity that recurs in periods of 24 hours under natural environmental conditions. Sleep patterns in mammals and leaf movements in some plants are examples of circadian rhythms.

**circannual rhythm**

A biological rhythm with a period of about one year.

**circle to land maneuver**

*Aviation*. A maneuver initiated by the pilot to align the aircraft with a runway for landing when a straight-in landing from an instrument approach is not possible or is not desirable. This maneuver is made only after Air Traffic Control (ATC) authorization has been obtained and the pilot has established required visual reference to the airport.

**circle to runway (runway number) maneuver**

*Aviation*. Used by Air Traffic Control (ATC) to inform the pilot that he must circle to land because the runway in use is other than the runway aligned with the instrument approach procedure. When the direction of the circling maneuver in relation to the airport/runway is required, the controller will state the direction (eight cardinal compass points) and specify a left or right downwind or base leg as appropriate (e.g., "Cleared Very High Frequency Omni-Directional Radio Range (VOR) Runway Three Six Approach circle to Runway Two," or "Circle northwest of the airport for a right downwind to Runway Two.").

**circling approach**

See *circle to land maneuver*.

**circuit**

A conductor or a system of conductors through which electric current flows.

**circuit breaker**

(1) *600 Volts Nominal, or Less*. A device designed to open and close a circuit by non-automatic means and to open the circuit automatically on a predetermined overcurrent without damage to itself when properly applied within its rating. (2) *Over 600 volts, nominal*. A switching device capable of making, carrying, and breaking currents under normal circuit conditions, and also making, carrying for a specified time, and breaking currents under specified abnormal circuit conditions, such as those of short circuit.

**circuit controller**

A device for opening and closing electric circuits.

**circuit courts**

Courts whose jurisdiction extends over several counties or districts, and of which terms are held in the various counties or districts to which their jurisdiction extends.

**circuit courts of appeals**

The former name for federal intermediate appellate courts, changed in 1948 to the present designation of United States Courts of Appeals.

**circuit-mile**

The total length in miles of separate circuits regardless of the number of conductors used per circuit.

**circulation**

(1) The movement of blood through the circulatory system. (2) The movement of people, information, supplies, equipment, or other items within a building or other structure where work is being accomplished.

**circulator bus**

A bus serving an area confined to a specific locale, such as a downtown area or suburban neighborhood with connections to major traffic corridors.

**circulatory system**

The major system concerned with the movement of blood and lymph; it consists of the heart, blood vessels, and lymph vessels. The circulatory system transports to the tissues and organs of the body the oxygen, nutritive substances, immune substances, hormones, and chemicals necessary for normal function and activities of the organs; it also carries away waste products and carbon dioxide. It equalizes body temperature and helps maintain normal water and electrolyte balance. An adult male has an average of 5 quarts of blood in his body; the circulatory system carries this entire quantity on one complete circuit through the body every minute. In the course of 24 hours, 7200 quarts of blood pass through the heart. The rate of blood flow through the vessels depends upon several factors: force of the heartbeat, rate of the heartbeat, venous return, and control of the arterioles and capillaries by chemical, neural and thermal stimuli.

**circumaural protector**

A form of hearing protector commonly known as the earmuff, consisting of two cup-shaped devices that fit over the entire external ear and are sealed against the side of the head.

**circumduction**

A basic type of joint motion occurring in those joints capable of three-dimensional

movement in which the proximal end of a bone in its socket provides the apex of a cone and the distal end of that bone moves in a circular pattern, sweeping out a conical volume.

**circumference**

(1) A curved, closed, anthropometric measurement that follows a body contour. It need not be circular. *See also arc.* (2) The length comprising the perimeter of a circle.

**circumoral paresthesia**

A burning sensation around or near the mouth.

**circumstances**

Attendant or accompanying facts, events, or conditions. Subordinate or accessory facts (e.g., evidence that indicates the probability or improbability of an event).

**circumstantial evidence**

Testimony not based on actual personal knowledge or observation of the facts in controversy, but of other facts from which deductions are drawn, showing indirectly the facts sought to be proved.

**circus wagon**

*Transportation (slang).* Low-sided trailer with high bow tarp.

**cirrhosis**

Interstitial inflammation of an organ, particularly the liver. Cirrhosis is marked by degeneration of the liver cells and thickening of the surrounding tissue.

**cirrocumulus**

A high cloud that appears as a white patch of cloud without shadows. It consists of very small elements in the form of grains or ripples.

**cirrostratus**

A high cloud appearing as a whitish veil that may totally cover the sky. Often produces halo phenomena.

**cirrus**

A high cloud composed of ice crystals in the form of thin, white, feather-like clouds in patches, filaments, or narrow bands.

**cistern**

A small covered tank for storing water, usually placed underground.

**citation**

(1) A writ issued out of a court of competent jurisdiction, commanding a person therein



named to appear on a day named and do something therein mentioned, or show cause why he/she should not. (2) A written notice from a regulatory agency alleging an employer's non-compliance with a specific standard or regulation, or group of standards or regulations, or the General Duty Clause of the OSHAct of 1970.

**citizen suit**

(1) *General*. A type of legal action in court brought by persons (or organizations on behalf of members) to enforce laws against violators, usually invoking a statutory right to sue without showing traditional standing. (2) *CERCLA*. A provision under CERCLA which permits any person to initiate a civil action against any other person, including the United States, for violations of any standard, regulation, condition, requirement, or order effective under CERCLA, and against any officer of the United States for failure to perform a non-discretionary act under CERCLA.

**citric acid**

A crystalline acid present in citrus fruits. Chemical formula is  $C_6H_8O_7 \cdot H_2O$ .

**city flyer**

*Transportation (slang)*. Short, low trailer with high bow tarp.

**city gate**

A point or measuring station at which a distribution gas utility receives gas from a natural gas pipeline company or transmission system.

**City Solicitor**

*See Town Counsel.*

**city trip**

A commercial vehicle trip within a single city, town, county, or other geographic jurisdiction.

**civil**

An area of the law where matters are decided with no criminal consequences, as in contracts, torts, eminent domain, licensing, grants, Civil Penalties, and most administrative enforcement. Contrasted with investigations and criminal prosecutions carried out following Criminal Procedure rather than Civil Procedure.

**civil action**

Action brought to enforce, redress, or protect private rights. In general, all types of actions other than criminal proceedings. The term in-

cludes all actions, or, in other phraseology, both suits in equity and actions, at law.

**Civil Aeronautics Board (CAB)**

A defunct organization. Originally, an independent regulatory commission that was established under the Civil Aeronautics Act of 1938. Its functions were terminated or transferred to other agencies beginning in 1966, with all remaining functions transferred to the U.S. Secretary of Transportation by 1985.

**civil aircraft**

Aircraft other than public aircraft.

**civil death**

The state of a person who, though possessing natural life, has lost all civil rights and as to them is considered civilly dead.

**civil jury trial**

Trial of civil action before a jury rather than before a judge. In suits at common law in federal court where the value in controversy exceeds \$20.00, there is a constitutional right to a jury trial.

**civil law**

That body of law which every particular nation, commonwealth, or city has established peculiarly for itself; more properly called "municipal" law, to distinguish it from the "law of nature," and from international law. These laws are concerned with civil or private rights and remedies, as contrasted with criminal laws.

**civil liberties**

Personal, natural rights guaranteed and protected by the Constitution. Examples are freedom of speech, press, freedom from discrimination, etc. The body of law dealing with natural liberties, shorn of excesses which invade equal rights of others. Constitutionally, they are restraints on government.

**civil nuisance**

At common law, anything done to hurt or annoyance of lands, tenements, or hereditaments of another.

**civil obligation**

One which binds in law, and may be enforced in a court of justice.

**civil offense**

Term used to describe violations of statutes making the act a public nuisance.

**civil penalties**

Represents punishment for specific activities, e.g., violation of antitrust or securities laws, usually in the form of fines or money damages.

**civil procedure**

Body of law concerned with methods, procedures, and practices used in civil litigation.

**Civil Rights Act**

An act designed to prohibit public accommodations and employment discrimination due to a person's color, race, religion, sex, or national origin.

**claim**

(1) To demand as one's own or as one's own right; to assert; to urge; to insist. A cause of action. Means by or through which a claimant obtains possession or enjoyment of a privilege or thing. Demand for money or property as a right (e.g., an insurance claim).

**claim adjuster**

An independent agent or employee of an insurance company who negotiates and settles claims against the insurer.

**claimant**

One who claims or asserts a right, demand, or claim.

**Claims Court, U.S.**

This federal court was established in 1982 and succeeds to all the original jurisdiction formerly exercised by the Court of Claims. The court has jurisdiction to render money judgments upon any claim against the United States founded under either (a) upon the Constitution, or (b) any act of Congress or any regulation of an executive department, or (c) upon any express or implied in fact contract with the United States, or (d) for liquidated or unliquidated damages in cases not sounding in tort. Judgments of the Court are final and conclusive on both the claimant and the United States subject to an appeal as of right to the U.S. Court of Appeals for the Federal Circuit. Authority also rests with the court to furnish reports on any bill that may be referred by either House of Congress. Jurisdiction of the Court is nationwide, and jurisdiction over the parties is obtained when suit is filed and process is served on the United States through the Attorney General.

**clarification**

Clearing action that occurs during wastewater treatment when solids settle out. This is often aided by centrifugal action and chemically induced coagulation in wastewater.

**clarifier**

A quiescent tank used to remove suspended solids by gravity settling. Also called sedimentation or settling basins, they are usually equipped with a motor-driven rake mechanism to collect settled sludge and move it to a central discharge point.

**clarifying agent**

Any substance used to remove turbidity from drinks.

**clarifying lotion**

A substance for removing oil and grease from the face.

**clash point**

A point at which the human body or its reach envelope, whether physically or in computer modeling, intersects some equipment, instrumentation, or workspace boundaries in a workplace.

**class**

(1) With respect to the certification, ratings, privileges, and limitations of airmen, means a classification of aircraft within a category having similar operating characteristics. Examples include single engine, multiengine, land, water, gyroplane, helicopter, airship, and free balloon. (2) With respect to the certification of aircraft, means a broad grouping of aircraft having similar characteristics of propulsion, flight, or landing. Examples include airplane, rotorcraft, glider, balloon, land plane, and seaplane.

**Class I biological safety cabinet**

An open-front, negative pressure, ventilated cabinet with a minimum inward face velocity at the work opening of at least 75 feet per minute with the exhaust air filtered through a HEPA filter.

**Class II biological safety cabinet-laminar flow**

An open-front, ventilated cabinet with an average inward face velocity at the work opening of at least 75 feet per minute and providing HEPA-filtered recirculated airflow in the cabinet workspace and exhaust air passed through a HEPA filter.

**Class III biological safety cabinet**

A totally enclosed cabinet of gas-tight construction, such as a glove-box. The exhaust fan for this cabinet is a dedicated unit with exhaust air discharged directly to the outdoors. Air entering the cabinet is passed through a HEPA filter, with operations conducted in the enclosure using glove ports. In use, the cabinet is maintained at 0.5 inches water gauge negative pressure.

**Class 100 Clean Room**

An area or room in which the particle count in the air does not exceed 100 particles per cubic foot in the size range of 0.5 micrometers and larger.

**Class 10,000 Clean Room**

An area or room in which the particle count in the air does not exceed 10,000 particles per cubic foot larger than 0.5 micrometers or 65 particles per cubic foot larger than 5 micrometers in size.

**Class 100,000 Clean Room**

An area or room in which the particle count in the air does not exceed 100,000 particles per cubic foot larger than 0.5 micrometers or 700 particles per cubic foot larger than 5 micrometers.

**Class I Freight Railroad**

Defined by the Interstate Commerce Commission each year based on annual operating revenue. For 1988, the threshold for Class I railroads was \$87.9 million. A railroad is dropped from the Class I list if it fails to meet the annual earnings threshold for three consecutive years.

**Class I laser**

Referred to as an exempt laser. Under normal conditions, these do not emit a hazardous level of optical radiation.

**Class I Motor Carrier**

Motor carrier with annual revenues greater than \$10 million. Prior to January 1, 1994, the revenue classification level was \$5 million.

**Class I Railroad**

A railroad with an annual gross operating revenue in excess of \$250 million based on 1991 dollars.

**Class II laser**

A low-power laser which may cause retinal injury if viewed for long periods of time.

**Class II Motor Carrier**

Motor carrier with annual revenues between \$3 and \$10 million. Prior to January 1, 1994, the revenue classification level was between \$1 and \$5 million.

**Class III-A laser**

A visible laser which can cause injury to the eyes. Class III laser devices are classed as medium-power laser devices.

**Class III-B laser**

Can cause injury to the eye as a result of viewing the direct or reflected beam. Class III laser devices are classed as medium-power laser devices.

**Class III Motor Carrier**

Motor carrier with annual revenues over \$1 million and less than \$3 million. Prior to January 1, 1994, the revenue classification level was under \$1 million.

**Class IV laser**

These are high-powered laser systems that require extensive exposure controls for preventing eye and skin exposure to both the direct and reflected laser beam.

**Class V laser**

Includes any Class II, III, or IV laser device which, by virtue of appropriate design or engineering controls, cannot directly irradiate the eye at levels in excess of established exposure limits.

**Class I Location**

Those in which flammable gases or vapors are or may be present in the air in quantities sufficient to produce explosive or ignitable mixtures. Class I locations include

*Class I, Division 1.* A location in which a) hazardous concentrations of flammable gases or vapors may exist under normal operating conditions, or b) hazardous concentrations of such gases or vapors may exist frequently because of repair or maintenance operations or because of leakage, or c) breakdown or faulty operation of equipment or processes might release hazardous concentrations of flammable gases or vapors, and might also cause simultaneous failure of electric equipment. This classification usually includes locations where volatile flammable liquids or liquefied flammable gases are transferred from one container to another; interiors of spray booths

and areas in the vicinity of spraying and painting operations where volatile flammable solvents are used; locations containing open tanks or vats of volatile flammable liquids; drying rooms or compartments for the evaporation of flammable solvents; locations containing fat and oil extraction equipment using volatile flammable solvents; portions of cleaning and dyeing plants where flammable liquids are used; gas generator rooms and other portions of gas manufacturing plants where flammable gas may escape; inadequately ventilated pump rooms for flammable gas or for volatile flammable liquids; the interiors of refrigerators and freezers in which volatile flammable materials are stored in open, lightly stopped, or easily ruptured containers; and all other locations where ignitable concentrations of flammable vapors or gases are likely to occur in the course of normal operations.

*Class I, Division 2.* A location in which a) volatile flammable liquids or flammable gases are handled, processed, or used, but in which the hazardous liquids, vapors, or gases will normally be confined within closed containers or closed systems from which they can escape only in the case of accidental rupture or breakdown of such containers or systems, or in the case of abnormal operation of equipment, or b) hazardous concentrations of gases or vapors are normally prevented by positive mechanical ventilation, and which might become hazardous through failure or abnormal operations of the ventilating equipment, or c) that is adjacent to a Class I, Division 1 location, and to which hazardous concentrations of gases or vapors might occasionally be communicated unless such communication is prevented by adequate positive-pressure ventilation from a source of clean air, and effective safeguards against ventilation failure are provided. This classification usually includes locations where volatile flammable liquids or flammable gases or vapors are used, but which would become hazardous only in case of an accident or of some unusual operating condition. The quantity of flammable material that might escape in case of accident, the adequacy of ventilating equipment, the total area involved, and the record of the industry or business with respect to explosions fires are all factors that merit consideration in de-

termining the classification and extent of each location. Piping without valves, checks, meters, and similar devices would not ordinarily introduce a hazardous condition even though used for flammable liquids or gases. Locations used for the storage of flammable liquids or liquefied or compressed gases in sealed containers would not normally be considered hazardous unless also subject to other hazardous conditions. Electrical conduits and their associated enclosures separated from process fluids by a single seal or barrier are classed as a Division 2 location if the outside of the conduit and enclosure is a nonhazardous location.

### **Class II Location**

Those that are hazardous because of the presence of combustible dust. Class II locations include the following:

*Class II, Division 1.* A location in which a) combustible dust is or may be in suspension in the air under normal operating conditions, in quantities sufficient to produce explosive or ignitable mixtures, or b) where mechanical failure or abnormal operation of machinery or equipment might cause such explosive or ignitable mixtures to be produced, and might also provide a source of ignition through simultaneous failure of electric equipment, operation of protection devices, or from other causes, or c) in which combustible dusts of an electrically conductive nature may be present. This classification may include areas of grain handling and processing plants, starch plants, sugar-pulverizing plants, malting plants, hay-grinding plants, coal pulverizing plants, areas where metal dusts and powders are produced or processed, and other similar locations which contain dust producing machinery and equipment (except where the equipment is dust-tight or vented to the outside). These areas would have combustible dust in the air, under normal operating conditions, in quantities sufficient to produce explosive or ignitable mixtures. Combustible dusts which are electrically nonconductive include dusts produced in the handling and processing of grain products, pulverized sugar and coca, dried egg and milk powders, pulverized spices, starch and pastes, potato and wood flour, oil meal and beans and seed, dried hay, and other organic materials which

may produce combustible dusts when processed or handled. Dusts containing magnesium or aluminum are particularly hazardous and the use of extreme caution is necessary to avoid ignition and explosion.

*Class II, Division 2.* A location in which a) combustible dust will not normally be in suspension in the air in quantities sufficient to produce explosive or ignitable mixtures, and dust accumulations are normally insufficient to interfere with the normal operation of electrical equipment or other apparatus, or b) dust may be in suspension in the air as a result of infrequent malfunctioning of handling or processing equipment, and dust accumulations resulting therefrom may be ignitable by abnormal operation or failure of electrical equipment or other apparatus. This classification includes locations where dangerous concentrations of suspended dust would not be likely but where dust accumulations might form on or in the vicinity of electric equipment. These areas may contain equipment from which appreciable quantities of dust would escape under abnormal operating conditions or be adjacent to a Class II, Division 1 location, as described above, into which an explosive or ignitable concentration of dust may be put into suspension under abnormal operating conditions.

### **Class III Location**

Those locations that are hazardous because of the presence of easily ignitable fibers or flying but in which such fibers or flyings are not likely to be in suspension in the air in quantities sufficient to produce ignitable mixtures. Class III locations include the following:

*Class III, Division 1.* A location is a location in which easily ignitable fibers or materials producing combustible flyings are handled, manufactured, or used. Such locations usually include some parts of rayon, cotton, and other textile mills; combustible fiber manufacturing and processing plants; cotton gins and cotton-seed mills; flax-processing plants; clothing manufacturing plants; wood-working plants, and establishment; and industries involving similar hazardous processes or conditions. Easily ignitable fibers and flyings include rayon, cotton (including cotton linters and cotton waste), sisal or henequen, istle, jute, hemp, tow, cocoa fiber, oakum,

baled waste kapok, Spanish moss, excelsior, and other materials of similar nature.

*Class III, Division 2.* A location in which easily ignitable fibers are stored or handled, except in the process of manufacturing.

### **Class 1 Road**

Hard surface highways including interstate and U.S. numbered highways (including alternates), primary state routes, and all controlled access highways.

### **Class 2 Road**

Hard surface highways including secondary state routes, primary county routes, and other highways that connect principal cities and towns, and link these places with the primary highway system.

### **Class 3 Road**

Hard surface roads not included in a higher class and improved, loose surface roads passable in all kinds of weather. These roads are adjuncts to the primary and secondary highway systems. Also included are important private roads such as main logging or industrial roads which serve as connecting links to the regular road network.

### **Class 4 Road**

Unimproved roads which are generally passable only in fair weather and used mostly for local traffic. Also included are driveways, regardless of construction.

### **Class 5 Road**

Unimproved roads passable only with 4-wheel drive vehicles.

### **Class A Explosive**

Possessing detonating or otherwise maximum hazard, such as dynamite, nitroglycerin, picric acid, lead azide, fulminate of mercury, black powder, blasting caps, and detonating primers.

### **Class A and B Explosives In Bulk**

The transportation, as cargo, of any Class A or B explosive(s) in any quantity.

### **Class A by Inland and Coastal Waterways Carrier**

A class A carrier by water is one with an average annual operation revenue that exceeds \$500,000.

### **Class A Fire**

A fire involving ordinary combustible materials such as paper, wood, cloth, and some rub-

ber and plastic materials. *See also fire classification.*

**Class B by Inland and Coastal Waterways Carrier**

A class B carrier by water is one with an average annual operating revenue greater than \$100,000 but less than \$500,000.

**Class B Explosive**

Possessing flammable hazard, such as propellant explosives (including some smokeless propellants), photographic flash powders, and some special fireworks.

**Class B Fire**

A fire involving flammable or combustible liquids, flammable gases, greases, and similar materials, and some rubber and plastic materials. *See also fire classification.*

**Class C Explosive**

Includes certain types of manufactured articles which contain Class A or Class B explosives, or both, as components but in restricted quantities.

**Class C Fire**

A fire involving energized electrical equipment where the safety to firefighter requires the use of electrically non-conductive extinguishing media. *See also fire classification.*

**Class D Fire**

A fire involving combustible metals such as magnesium, titanium, zirconium, sodium, lithium, and potassium. *See also fire classification.*

**classical anthropometry**

The measurement of various static body girths and lengths with measurement devices such as a simple tape measure, anthropometer, and calipers. Synonymous with *conventional anthropometry* and *traditional anthropometry*.

**classical conditioning**

A type of learning in which an initially neutral stimulus is paired with a natural stimulus and response such that after some number of trials the neutral stimulus will elicit the natural response.

**classification**

Arrangement into groups or categories on the basis of established criteria. The word may have two meanings, one primarily signifying a division required by statutes, fundamental

and substantial, and the other secondary, signifying an arrangement or enumeration adopted for convenience only.

**classification of risks**

Term used in fire insurance to designate the nature and situation of the articles insured, and in accident insurance to the occupation of the applicant.

**classified waste**

Waste material that has been given security classification in accordance with the U.S. Code and Executive Order.

**classifier**

A device used to separate constituents according to relative sizes or densities.

**clastogenic**

Substance that damages chromosomes.

**clathrate**

A compound formed by the inclusion of molecules in cavities formed by crystal lattices.

**claused bill of lading**

A bill of lading which has exceptions to the receipt of merchandise in "apparent good order" noted.

**clavicle**

The bone which connects the sternum and the scapula. Synonymous with *collarbone*.

**clay**

A fine-grained earthy material that is plastic when wet, rigid when dried, and vitrified when fired to high temperatures.

**clay liner**

A layer of clay soil added to the bottom and sides of an earthen basin for use as a disposal site of potentially hazardous wastes.

**clean**

(1) To remove dirt, impurities, or other undesired entities. (2) Pertaining to a condition in which specified or implied standards are met for cleanliness.

**clean air**

Air that is free of any substance that will adversely affect the operation or cause a response of an instrument.

**Clean Air Act (CAA)**

1970 U.S. federal law requiring air pollutant emission standards; reauthorized in 1977 and again in 1990.



### **Clean Air Act Amendments (CAAA)**

Amendments issued in 1990 to expand the EPA's enforcement powers and place restrictions on air emissions.

### **clean alternative fuel**

Under the Clean Air Act (CAA), any fuel, including methanol, ethanol, or other alcohols (including any mixture thereof containing 85 percent or more by volume of such alcohol with gasoline or other fuels, reformulated gasoline, diesel, natural gas, liquefied petroleum gas, and hydrogen) or power source (including electricity) used in a clean-fuel vehicle that complies with the standards and requirements applicable to such vehicle under CAA when using such fuel or power source. In the case of any flexible fuel vehicle or dual-fuel vehicle, the term "clean alternative fuel" means only a fuel with respect to which such vehicle was certified as a clean-fuel vehicle meeting the standards applicable to clean-fuel vehicles under the CAA when operating on clean alternative fuel (or any California Air Research Board standards which replace such standards pursuant to the CAA).

### **clean area**

In asbestos abatement, a controlled environment which is maintained and monitored to assure a low probability of asbestos contamination in that space.

### **clean bill of lading**

A bill of lading which covers goods received in apparent good order and condition and without qualification.

### **clean bore**

A single tank without compartments inside.

### **clean coal technology**

Under the Clean Air Act (CAA), any technology, including technologies applied at the pre-combustion, combustion, or post-combustion stage, at a new or existing facility which will achieve a significant reduction in air emissions of sulfur dioxide or oxides of nitrogen associated with the utilization of coal in the generation of electricity, process steam, or industrial products, which was not in widespread use as of November 15, 1990.

### **clean-fuel vehicle**

Under the Clean Air Act (CAA), a vehicle in a class or category of vehicles which has been certified to meet, for any model year, the

clean-fuel vehicle standards applicable under the CAA for that model year to clean-fuel vehicles in that class or category.

### **clean room**

A specially constructed area or space that is carefully controlled for airborne aerosols, temperature, humidity, air flow, and, in some cases, air pressure. Personnel who enter or work in such a space must follow very strict protocols with regard to clothing and other coverings (e.g., hair, face, etc.) to ensure the integrity of the clean room environment. Periodic measurements are taken inside the room to determine the level of contaminants present. The level of these protocols is usually dependent upon the class of clean room. *See also [Class 100/10,000/100,000 Clean Room](#).*



*Personnel who work in a clean room environment are required to take specific precautions and wear special clothing that ensure the preservation of clean room integrity.*

### **Clean Water Act (CWA)**

1972 U.S. federal law regulating surface water discharges; updated in 1987.

### **cleaning allowance**

That paid time given an employee for personal hygiene required due to the working en-

vironment and for workspace and tool cleaning. Also referred to as *cleanup time*.

**cleanup**

Actions taken to deal with the release or threat of release of a hazardous substance that could affect humans and/or the environment. The term "cleanup" is sometimes used interchangeably with the terms *remedial action*, *removal action*, *response action*, or *corrective action*.

**cleanup time**

See *cleaning allowance*.

**clear**

(1) A function which removes the current selection from the display. (2) To remove any turbidity from a fluid. (3) Without conflict or confusion in understanding or action.

**clear air turbulence (CAT)**

Turbulence encountered by aircraft flying through cloudless skies. Thermals, wind shear, and jet streams can each be a factor in producing this phenomenon.

**clear and convincing proof**

That proof which results in reasonable certainty of the truth of the ultimate fact in a controversy. This is proof which requires more than a preponderance of evidence, but less than proof beyond a reasonable doubt.

**clear and present danger**

Doctrine in constitutional law providing that governmental restrictions on First Amendment freedoms of speech and press will be upheld if necessary to prevent grave and immediate danger to those interests which the government may lawfully protect. Speech which incites to unlawful action falls outside the protection of the First Amendment where there is a direct connection between the speech and violation of the law (this is the "clear and present danger test").

**clear cutting**

The practice of completely felling a stand of trees, usually followed by the replanting of a single species.

**clear evidence or proof**

Evidence which is positive, precise, and explicit, which tends directly to establish the point which is adduced and is sufficient to establish a prima facie case. It necessarily means a clear preponderance of proof.

**clear ice**

A layer of ice that appears transparent because of its homogeneous structure and small number and size of air pockets.

**clear of the runway**

(1) A taxiing aircraft, which is approaching a runway, is clear of the runway when all parts of the aircraft are held short of the applicable holding position marking. (2) A pilot or controller may consider an aircraft, which is exiting or crossing a runway, to be clear of the runway when all parts of the aircraft are beyond the runway edge and there is no Air Traffic Control (ATC) Federal Aviation Administration (FAA) Glossary C 2 restriction to its continued movement beyond the applicable holding position marking. (3) Pilots and controllers shall exercise good judgment to ensure that adequate separation exists between all aircraft on runways and taxiways at airports with inadequate runway edge lines or holding position markings.

**clearance lamp**

A lamp used on the front and the rear of a motor vehicle to indicate its overall width and height.

**clearance limit**

The fix, point, or location to which an aircraft is cleared when issued an air traffic clearance.

**clearance sampling**

A sampling procedure carried out at the end of an asbestos abatement activity to determine whether the asbestos abatement has been effective and the fiber concentration is acceptable. Typically, the acceptable concentration is the background level, or that which has been specified in the abatement contract.

**clearance traffic control**

Authorization for an aircraft to proceed under conditions specified by an air traffic control unit.

**clearance void if not off by time**

Used by Air Traffic Control (ATC) to advise an aircraft that the departure clearance is automatically canceled if takeoff is not made prior to a specified time. The pilot must obtain a new clearance or cancel his Instrument Flight Rules (IFR) flight plan if not off by the specified time.

**clearance void time**

A time specified by an air traffic control unit at which a clearance ceases to be valid unless the aircraft concerned has already taken action to comply therewith.

**cleared approach**

Air Traffic Controller (ATC) authorization for an aircraft to execute any standard or special instrument approach procedure for that airport. Normally, an aircraft will be cleared for a specific instrument approach procedure.

**cleared as filed**

Means the aircraft is cleared to proceed in accordance with the route of flight filed in the flight plan. This clearance does not include the altitude, standard instrument departure (SID), or SID transition.

**cleared for takeoff**

Air Traffic Control (ATC) authorization for an aircraft to depart. It is predicated on known traffic and known physical airport conditions.

**cleared for the option**

Air Traffic Control (ATC) authorization for an aircraft to make a touch-and-go, low approach, missed approach, stop-and-go, or full-stop landing at the discretion of the pilot. It is normally used in training so that an instructor can evaluate a student's performance under changing situations. Also known as *option approach*.

**cleared through**

Air Traffic Control (ATC) authorization for an aircraft to make intermediate stops at specified airports without refiling a flight plan while enroute to the clearance limit.

**cleared to land**

Air Traffic Control (ATC) authorization for an aircraft to land. It is predicated on known traffic and known physical airport conditions.

**clearway**

*Aviation.* (1) For turbine engine powered airplanes certificated after August 29, 1959, an area beyond the runway, not less than 500 feet wide, centrally located about the extended centerline of the runway, and under the control of the airport authorities. The clearway is expressed in terms of a clearway plane, extending from the end of the runway with an upward slope not exceeding 1.25 percent,

above which no object nor any terrain protrudes. However, threshold lights may protrude above the plane if their height above the end of the runway is 26 inches or less and if they are located to each side of the runway.

(2) For turbine engine powered airplanes certificated after September 30, 1958, but before August 30, 1959, an area beyond the takeoff runway extending no less than 300 feet on either side of the extended centerline of the runway, at an elevation no higher than the elevation of the end of the runway, clear of all fixed obstacles, and under the control of the airport authorities.

**clearwell**

A tank or reservoir of filtered water used to backwash a filter.

**cleats**

With regard to ladders, cross-pieces of rectangular cross-section placed on edge which a person may step in, ascending or descending.

**cleavage line**

Any line of tension in the skin along which a tear will tend to occur from a penetrating object, producing a slit rather than a rounded opening. Also referred to as *Langer's line*.

**Clerical Task Inventory (CTI)**

A compilation of over 100 clerical or office-type tasks for job evaluation or wage determination purpose.

**click**

Press and release a button on an input device such as a mouse or track ball to provide a command or other input to a computer.

**client**

An individual, corporation, trust, or estate that employs a professional to advise or assist it in the professional's line of work. Professionals include but are not limited to safety and health professionals, industrial hygienists, environmental personnel, attorneys, accountants, architects, etc.

**client's privilege**

The right of a client to require an attorney not to disclose confidential communications made to him/her in the attorney-client relationship, including disclosure on the witness stand.

**climate**

The accumulation of daily and seasonal weather events over a long period of time.

**climatic optimum**

A period in geological history (approximately 7000 to 5000 years ago) when temperatures were warmer than at present.

**climatological forecast**

A weather forecast, usually a month or more in the future, which is based upon the climate of a region rather than upon current weather conditions.

**climb to VFR**

Air Traffic Control (ATC) authorization for an aircraft to climb to Visual Flight Rules (VFR) conditions within clause B, C, D, and E surface areas when the only weather limitation is restricted visibility. The aircraft must remain clear of clouds while climbing to Visual Flight Rules (VFR).

**climbout**

That portion of flight operation between take-off and the initial cruising altitude.

**climbout speed**

With respect to rotorcraft, means a referenced airspeed which results in a flight path clear of the height-velocity envelope during initial climbout.

**clinical laboratory**

A workplace where diagnostic or other screening procedures are performed on blood or other potentially infectious materials.

**clinical tests**

Tests involving direct observation of the patient, including laboratory and diagnostic examinations.

**clinker**

A fused byproduct of the combustion of coal or other solid fuels.

**clino**

See *clinoptilolite*.

**clinoptilolite**

A naturally occurring clay that can be used in an ion exchange process for ammonia removal.

**clipboard**

A temporary computer-editing buffer which is independent of, but able to interface with, other system applications. Also referred to as *temporary editing buffer*.

**clo**

A unit for the thermal insulation provided by clothing, not counting the approximately 25%

for heat loss via the respiratory system and passive diffusion through the skin; that amount of insulation needed in a sitting and resting average individual to be thermally comfortable in a normally ventilated room (approximately 10 cm/sec air velocity, 21°C temperature, and 50% relative humidity).

**clockwise rotating shift**

Pertaining to a rotating shift work schedule in which the shift worked is periodically delayed by increments (i.e., from the first shift to the second, or from the second to the third).

**cloning**

In biotechnology, obtaining a group of genetically identical cells from a single cell. This term has assumed a more general meaning that includes making copies of a gene.

**close-coupled pump**

A pump coupled directly to a motor without gearing or belting.

**close the gates**

*Transportation (slang)*. To close the rear doors of a trailer.

**Close View**

A feature which permits enlargement of the display characters for easier reading by visually impaired individuals.

**closed-circuit SCBA**

A self-contained respiratory protective device in which the breathing air is recirculated and rebreathed after carbon dioxide has been removed to maintain the quality of the breathing air.

**closed-cycle cooling system**

A cooling water system in which heat is transferred by recirculating water contained within the system, producing a relatively small blow downstream of concentrated solids.

**closed insurance policy**

Insurance contract, the terms and rates of which cannot be changed.

**closed-loop recycling**

Reclaiming or reusing wastewater for non-potable purposes in an enclosed process.

**closed-loop system**

Any type of system in which the output or some derivative of the output from the system is directed back into the system itself. Synonymous with *feedback control loop*.

**closed respiration system**

A breathing gas system that is self-contained and provides a continuing and proper oxygen/nitrogen supply ratio and pressure for its personnel, with removal of carbon dioxide and excess water vapor.

**closed runway**

A runway that is unusable for aircraft operations. Only the airport management/military operations office can close a runway.

**closed shop**

Exists where workers must be members of a union as a condition of their employment. This practice was made unlawful by the Taft-Hartley Act.

**closed shop contract**

A contract requiring an employer to hire only union members and to discharge nonunion members and requiring that employees, as a condition of employment, remain union members. A "closed shop" provision in a collective bargaining agreement requires membership in the contracting union before a job applicant can be employed and for the duration of his/her employment.

**closed traffic**

Successive operations involving takeoffs and landings or low approaches where the aircraft does not exit the traffic pattern.

**closed union**

A labor union whose membership rolls have closed. *See also* [closed shop](#).

**closed window**

A display window not accessible to the user without taking some specific action to gain access.

**closing argument**

The final statements by an attorney to the jury or the court summarizing the evidence that they think they have established and the evidence that they think the other side has failed to establish. The argument *does not* constitute evidence and may be limited in time by rule of the court.

**closing dam**

An earthen, sand, rock, or rock and brush structure built across sloughs or back channels to stop current flow at water stages below the crest elevation of the structure. Low flows are thus diverted to the main channel.

**closure**

Occurs when a series of pattern elements are perceived as a single unit, rather than unrelated parts.

**closure plan**

Written plan to decommission and secure a hazardous waste management facility.

**clothes changing allowance**

Any work time for which an employee is paid due to a requirement for removing one clothing assembly and donning another. Also called *clothes changing time*.

**clothes changing time**

*See* [clothes changing allowance](#).

**clothing**

Any tailored or processed material or combination of materials which may be used to cover the body or its parts, for whatever purposes.

**clothing area factor ( $f_{cl}$ )**

That portion of increased surface area over the nude body which is added by clothing. Represented by the formula:

$$f_{cl} = \frac{\text{clothed body surface area}}{\text{nude body surface area}}$$

**clothing assembly**

*See* [clothing system](#).

**clothing ensemble**

*See* [clothing system](#).

**clothing fastener**

Any device, mechanism, or system for attaching different articles of clothing or portions of a single piece of clothing together.

**clothing insulation value**

*See* [thermal insulation value of clothing](#).

**clothing system**

The combination of garments and their arrangement being worn on the body at any one time. Also referred to as *clothing assembly* and *clothing ensemble*.

**clotting**

The formation of a jelly-like substance over the ends or within the walls of a blood vessel, with resultant stoppage of the blood flow. A natural defense mechanism of the body. A clot usually forms within 5 minutes after a blood vessel wall has been damaged.

**cloud**

A mass of small water droplets in the atmosphere that are not of sufficient size to fall to the earth.

**cloud chamber**

A device for observing the paths of ionizing particles, based on the principle that supersaturated vapor condenses more readily on ions than on neutral molecules.

**cloud seeding**

The introduction of artificial substances such as silver iodide or dry ice into clouds to induce rain.

**cloud streets**

Term used to describe lines or rows of cumuliform clouds.

**cloud-to-ground lightning**

See *lightning*.

**cloudburst**

Any sudden and heavy rain shower.

**CLP**

See *Contract Laboratory Program*.

**cluster**

(1) *Epidemiology*. An increased incidence or suspected excess occurrence of a disease in time, location, area, occupation, etc. (2) *Fibers*. A structure with fibers in a random arrangement such that all fibers are intermixed and no single fiber is isolated from the group, with the groupings having more than two intersections.

**cluster workstation**

A multi-person workstation built around a central core to provide some separation from co-workers.

**cluster zoning**

Such zoning modifies lot size and frontage requirements on certain conditions involving setting aside of land by the developer for parks, schools, or other public needs.

**clutter**

In radar operations, clutter refers to the reception and visual display of radar returns caused by precipitation, chaff, terrain, numerous aircraft targets, or other phenomena. Such returns may limit or preclude Air Traffic Control (ATC) from providing services based on radar.

**cm**

Centimeter.

**CMA**

See *Chemical Manufacturers Association*.

**CMOS**

Complimentary metal oxide semiconductor sensor.

**CMSA**

See *consolidated metropolitan statistical area*.

**CMV**

See *commercial motor vehicle*.

**CNG**

See *compressed natural gas*.

**CNS**

See *central nervous system*.

**CNS effect**

An effect which occurs to the central nervous system, including drowsiness, dizziness, loss of coherence, and reasoning, as well as other effects.

**coach passenger revenue**

Revenues from the air transportation of passengers moving at fares reduced from the first class or premium fares which are predicated upon both the operation of specifically designated aircraft space and a reduction in the quality of service regularly and ordinarily provided.

**coach service**

Transport service established for the carriage of passengers at special reduced passenger fares that are predicated on both the operation of specifically designed aircraft space and a reduction in the quality of service regularly and ordinarily provided.

**co-administrator**

One who is a joint administrator with one or more others.

**coagulation**

The destabilization and initial aggregation of finely divided suspended solids by the addition of a polyelectrolyte or a biological process.

**coagulin**

An antibody (precipitin) that coagulates its antigen.



**coal**

A black or brownish-black solid, combustible substance formed by the partial decomposition of vegetable matter without access to air. The rank of coal, which includes anthracite, bituminous coal, sub-bituminous coal, and lignite, is based on fixed carbon, volatile matter, and heating value. Coal rank indicates the progressive alteration, or coalification, from lignite to anthracite. Lignite contains approximately 9 to 17 million British Thermal Unit (BTU) per ton. The heat contents of sub-bituminous and bituminous coal range from 16 to 24 million BTU per ton, and from 19 to 30 million BTU per ton, respectively. Anthracite contains approximately 22 to 28 million BTU per ton.

**coal gasification**

The conversion of solid coal to a gas mixture to be used as a fuel.

**coal miner's pneumoconiosis**

A pneumoconiosis resulting from the deposition of coal dust in the lungs. Characterized by emphysema. Also referred to as *black lung disease* and *coal worker's pneumoconiosis (CWP)*.

**coal pile runoff**

Rainfall runoff from or through a coal storage pile.

**coal slurry**

Finely crushed coal mixed with sufficient water to form a fluid.

**coal tar**

A black viscous liquid with a naphthalene-like odor that is obtained by the destructive distillation of bituminous coal and used as a raw material for dyes, solvents, and many other products. Coal tar is known to contain many carcinogens and, thus, its use has been extremely curtailed.

**coal worker's pneumoconiosis**

See *coal miner's pneumoconiosis*.

**coalesce**

The merging of two droplets to form a single, larger droplet.

**coalescence**

The merging of cloud droplets into a single larger droplet.

**Coalition for Environmentally Responsible Economies (CERES)**

Ten environmentally responsible principles originally known as the "Valdez Principles" with which a company voluntarily complies initially and in subsequent years. Some of the benefits to the company are positive publicity, lowering costs, and increasing revenues by recycling activities, and strengthening its environmental standards to avoid disasters.

**Coanda effect**

The tendency of a liquid coming out of a nozzle or orifice to travel close to the wall contour even if the wall curves away from the jet's axis.

**coarse-bubble aeration**

An aeration system that utilizes submerged diffusers which release relatively large bubbles.

**coarse sand**

Sand particles, usually larger than 0.5 mm.

**coarse screen**

A screening device usually having openings greater than 25 mm (1").

**coast**

(1) *General*. To continue moving without the additional application of mechanical or physical power, as in coasting in a motor vehicle, on a bicycle, or other type of vehicle. (2) *Ecology*. The edge or margin of a country bounding on the sea. The term includes small islands and reefs naturally connected with the adjacent land, and rising above the surface of the water. This word is particularly appropriate to the edge of the sea, while "shore" may be used to describe the margins of inland waters. In precise modern usage, the term "shore" denotes a line of low-water mark along a mainland, while the term "coast" denotes a line of shore plus the line where inland waters meet the open sea.

**Coast Guard**

The Coast Guard is responsible for enforcing federal laws on the high seas and navigable waters of the United States and its possessions. Navigation and vessel inspection laws are specific responsibilities. Under the provisions of the Federal Boating Act of 1958, Coast Guard boarding teams inspect small boats to insure compliance with required safety measures. The Coast Guard cooperates

with other agencies in their law enforcement responsibilities, including enforcement of drug, conservation, and marine environmental laws.

**coast waters**

Tide waters navigable from the ocean by sea-going craft, the term embracing all waters opening directly or indirectly into the ocean and navigable by ships coming in from the ocean as great as that of the larger ships which traverse the open seas.

**coastal**

Means transits to or from the Maritimes and U.S. Atlantic Ports.

**Coastal Air Defense Identification Zone**

An Air Defense Identification Zone (ADIZ) over the coastal waters of the United States.

**coastal ecosystem**

A system of interacting biological, chemical, and physical components throughout the water column, water surface, and benthic environment of coastal waters.

**coastal fix**

A navigation aid or intersection where an aircraft transitions between the domestic route structure and the oceanic route structure.

**coastal reclamation**

Reclaiming land from shallow coastal areas of the sea by dumping rubble and refuse, or by constructing breakwaters and sea walls and drainage of the enclosed area.

**coastal state**

A state of the United States in, or bordering on, the Atlantic, Pacific, or Arctic Oceans, the Gulf of Mexico, Long Island Sound, or one or more of the Great Lakes. Under the Federal Coastal Wetlands Planning, Protection and Restoration Act, the term may also include Puerto Rico, the Virgin Islands, Guam, the Commonwealth of the Northern Mariana Islands, and the Trust Territories of the Pacific Islands and American Samoa.

**coastal water quality (national coastal monitoring)**

The physical, chemical and biological parameters that relate to the health and integrity of coastal ecosystems.

**coastal water quality monitoring (national coastal monitoring)**

A continuing program of measurement, analysis, and synthesis to identify and quantify coastal water quality conditions and trends to provide a technical basis for decision making.

**coastal waters (United States)**

Waters of the Great Lakes, including their connecting waters and those portions of rivers, streams, and other bodies of water having unimpaired connection with the open sea up to the head of tidal influence, including wetlands, intertidal areas, bays, harbors, and lagoons, including waters of the territorial sea of the United States and the contiguous zone.

**Coastal Wetlands Conservation Project**

Under the Federal Coastal Wetlands Planning, Protection and Restoration Act, the obtaining of a real property interest in coastal lands or waters, if the obtaining of such interest is subject to terms and conditions that will ensure that the real property will be administered for the long-term conservation of such lands and waters and the hydrology, water quality, and fish and wildlife dependent thereon; and the restoration, management, or enhancement of coastal wetlands ecosystems if such restoration, arrangement, or enhancement is conducted on coastal lands and waters that are administered for the long-term conservation of such lands and waters and the hydrology, water quality, and fish and wildlife dependent thereon.

**Coastal Wetlands Restoration Project**

Under the Federal Coastal Wetlands Planning, Protection and Restoration Act, any technically feasible activity to create, restore, protect, or enhance coastal wetlands through sediment and freshwater diversion, water management, or other measures that the Task Force (Louisiana Coastal Wetlands Conservation and Restoration Task Force) consisting of the Secretary of the Army, who shall serve as chairman, the EPA Administrator, the Governor of Louisiana, the Secretary of the Interior, the Secretary of Agriculture and the Secretary of Commerce, finds will significantly contribute to the long-term restoration or protection of the physical, chemical and biological integrity of coastal wetlands in the State of Louisiana, and includes any such activity authorized

under the Coastal Wetlands Planning, Protection and Restoration Act or under any other provision of law, including, but not limited to, new projects, completion or expansion of existing or on-going projects, individual phases, portions, or components of projects and operation, maintenance and rehabilitation of completed projects. The primary purpose of a "coastal wetlands restoration project" shall not be to provide navigation, irrigation or flood control benefits.

#### **coastal zone**

(1) Lands and waters adjacent to the coast that exert an influence on the uses of the sea and its ecology, or, inversely, whose uses and ecology are affected by the sea. (2) In the United States the coastal waters (including the lands therein and thereunder) and the adjacent shore lands (including the waters therein and thereunder), strongly influenced by each other and in proximity to the shorelines of the several coastal states, and include islands, transitional and intertidal areas, salt marshes, wetlands, and beaches. The zone extends, in Great Lakes waters, to the international boundary between the United States and Canada and, in other areas, seaward to the outer limit of State title and ownership under the Federal Submerged Lands Act, the Act of March 2, 1917, the Covenant to Establish a Commonwealth of the Northern Mariana Islands in Political Union with the United States of America, as approved by the Act of March 24, 1976, or the Act of November 20, 1963, as applicable. The zone extends inland from the shorelines only to the extent necessary to control shore lands, the uses of which have a direct and significant impact on the coastal waters, and to control those geographical areas which are likely to be affected by or vulnerable to sea level rise. Excluded from the coastal zone are lands the use of which is by law subject solely to the discretion of or which is held in trust by the Federal Government, its officers, or agents. The term "coastal zone" refers to all United States waters subject to the tide, waters of the Great Lakes and Lake Champlain, specified ports and harbors on inland rivers, waters of the contiguous zone, other waters of the high seas subject to the National Contingency Plan, and the land

surface or land substrate, groundwaters, and ambient air proximal to those waters. The term "coastal zone" delineates an area of federal responsibility for response action. Precise boundaries are determined by agreements between the Environmental Protection Agency (EPA) and the U.S. Coast Guard (USCG), and are identified in Federal Regional Contingency Plans and Area Contingency Plans.

#### **Coastal Zone Management Act (CZMA)**

An Act requiring all federal agencies and permittees who conduct activities affecting a state's coastal zone to comply with an approved state coastal zone management program.

#### **coastwise traffic**

Domestic traffic which moves over the ocean, or the Gulf of Mexico, e.g., between New Orleans and Baltimore, New York and Puerto Rico, San Francisco and Hawaii, Puerto Rico and Hawaii. Traffic between Great Lakes ports and seacoast ports, when having a carriage over the ocean, is also deemed to be coastwise. The Chesapeake Bay and Puget Sound are considered internal bodies of water rather than arms of the ocean; traffic confined to these areas is deemed to be "internal" rather than coastwise.

#### **cobalt**

A chemical element, atomic number 27, atomic weight 58.933, symbol Co. Radioisotopes of cobalt are used for implantation in the treatment of various forms of malignancy and also serve as the radioactive source in teletherapy machines.

#### **COC**

See *cycles of concentration*.

#### **cocaine**

A white crystalline narcotic alkaloid extracted from coca leaves. Used as a local anesthetic. A "controlled substance" as included in narcotic laws.

#### **co-carcinogen**

A substance that works symbiotically with a carcinogen in the development of cancer.

#### **coccidioidomycosis**

See *desert fever*.

**coccus**

Spherical bacteria cells. Cocci (plural) may appear singly, in pairs called diplococci, in chains, or in grape-like clusters.

**coccyx**

A triangular-shaped bone at the base of the spine formed by the fusion of the lowest four (sometimes five or three) vertebrae, and forming the caudal extremity of the vertebral column.

**cochlea**

A spiral cavity of the inner ear, shaped like a snail shell, that contains the organ of hearing. The cochlea is filled with fluid and is connected with the middle ear by two membrane-covered openings, the oval window (fenestra vestibuli) and the round window (fenestra cochleae). Inside the cochlea is the organ of Corti, a structure of highly specialized cells that translate sound vibrations into nerve impulses. The cells of this organ have tiny hair-like strands (cilia) that protrude into the fluid of the cochlea. Sound vibrations are relayed from the tympanic membrane (eardrum) to the bones of hearing in the middle ear to the oval window of the cochlea, where they set up corresponding vibrations in the fluid of the cochlea. These vibrations move the cilia of the organ of Corti, which then sends nerve impulses to the brain.

**cochlear duct**

A tube-shaped structure within the cochlea which is filled with endolymph and contains the organ of Corti and the tectorial membrane.

**cochleitis**

Inflammation of the cochlea.

**cochleovestibular**

Pertaining to the cochlea and vestibule of the ear.

**cockpit**

The location within a vehicle from which control of the vehicle and observation of the external environment and events may occur. Usually refers to the operating/control area of an aircraft.



*The cockpit (or cabin) of an aircraft with the pilot in command seated on the left and the co-pilot seated on the right*

**COD**

See *certificate of disposal*. Also, acronym for chemical oxygen demand.

**code**

(1) To translate information or data from one form or symbol to another form or symbol which has a meaning in its own context. (2) A set of mandatory standards or regulations adopted by a local, regional, national, or international governmental agency which has the force and/or effect of law; a set of recommended rules or guidelines within an industry. (3) A sequence of steps in some process, such as a computer program or task. (4) A system of symbols which can be used to organize and/or communicate information about conditions, processes, or entities. (5) The number assigned to a particular multiple pulse reply signal transmitted by a transponder.

**Code of Federal Regulations**

The Code of Federal Regulations (CFR) is the annual accumulation of executive agency regulations published in the daily Federal Register (FR), combined with regulations is-

sued previously that are still in effect. Divided into 50 titles, each representing a broad subject area, individual volumes of the Code of Federal Regulations are revised at least once each calendar year and issued on a staggered quarterly basis. The CFR contains the general body of regulatory laws governing practice and procedure before federal administrative agencies. The CFR title for Labor, which includes occupational safety and health regulations, is number 29. Environmental regulatory requirements can be found in Title 40 and Transportation regulations are contained in Title 49.

### **Code of Hammurabi**

Prescribed indemnification for major injuries or death in circa 1792-1750 B.C. Required the punishment for causing the injury or death of another person to match the loss incurred, literally *an eye for an eye*. The Code's primary purpose was to assess blame and provide indemnification (or revenge), rather than to determine the cause of the accident itself. These set of laws were once considered the oldest promulgation of laws in human history prepared by a Babylonian king.

### **Code of Military Justice**

This code, which is uniformly applicable in all its parts to the Army, the Navy (including the Marines), the Air Force, and the Coast Guard, covers both the substantive and the procedural law governing military justice and its administration in all of the armed forces of the United States. The Code established a system of military courts, defines offenses, authorizes punishment, provides broad procedural guidance, and statutory protection which conform to the due process safeguards preserved and established by the Constitution. As an additional safeguard for an accused person, the Code also provides for a system of automatic appellate review. A Court of Military Review is established within each service to review all court-martial cases where the sentence includes death, punitive discharge, or confinement for one year or more. Appellate review in this court is automatic. No approved sentence of a court-martial may be executed unless such findings and sentence are affirmed by a Court of Military Appeals, which was established to review certain cases from all the Armed Forces. The latter Court

consists of three civilian judges. Automatic review before the Court is provided for all cases in which the sentence, as affirmed by a Court of Military Review, affects a general or flag officer or extends to death. In addition, the Judge Advocate General of each service may direct that a case be reviewed by the Court. An accused may petition the Court for review.

### **coded track circuit**

A track circuit in which the energy is varied or interrupted periodically.

### **codeine**

An alkaloid obtained from opium or prepared from morphine by methylation.

### **codification**

The process of collecting and arranging systematically, usually by subject, the laws of a state or country, or the rules and regulations covering a particular area or subject of law or practice. Examples include the United States Code, the Code of Military Justice, the Code of Federal Regulations, and the California Evidence Code. The end product may be called a code, revised code, or revised statutes.

### **codisposal**

A method of sludge disposal where the digested sludge is mixed with sorted refuse and incinerated, composted, or treated by pyrolysis prior to final disposal.

### **COE**

See *cab-over-engine*.

### **coefficient**

A number by which one value is to be multiplied in order to give another value, or a number that indicates the range of an effect produced under certain conditions.

### **coefficient alpha**

A measure of the internal consistency and/or reliability of a scale.

### **coefficient of alienation (k)**

A measure of the lack of relationship between two variables

$$k = \sqrt{1 - r^2}$$

where:

$r$  = correlation coefficient

### **coefficient of concordance**

See *Kendall's coefficient of concordance*.

**coefficient of correlation**

See *correlation coefficient*.

**coefficient of determination ( $r^2$ ,  $d$ )**

The proportion of the variance accounted for by the Pearson product-moment correlation coefficient; equal to the Pearson product-moment correlation coefficient squared. Synonymous with *generality*. See also *Pearson product-moment correlation coefficient*.

**coefficient of entry (Ce)**

The actual rate of flow caused by a given hood static pressure compared to the theoretical flow which would result if the static pressure could be converted to velocity pressure with 100% efficiency.

**coefficient of evaporative heat transfer**

See *evaporative heat transfer coefficient*.

**coefficient of friction ( $\mu$ )**

See *coefficient of rolling friction*, *coefficient of sliding friction*, *coefficient of static friction*. Synonymous with *friction coefficient*.

**coefficient of kinetic friction**

See *coefficient of rolling friction*, *coefficient of sliding friction*.

**coefficient of haze (COH)**

A measure of air visibility determined by the darkness of the stain remaining on white paper after it has been used to filter air.

**coefficient of multiple correlation**

See *multiple correlation coefficient*.

**coefficient of non-determination ( $k^2$ )**

That proportion of the variance between two variables not accounted for by the coefficient of determination.

**coefficient of reflection**

See *reflection coefficient*.

**coefficient of reliability**

See *reliability coefficient*.

**coefficient of rolling friction**

The ratio of the magnitude of the rolling force to the magnitude of the perpendicular force between two objects/surfaces at the point where their surfaces are parallel.

**coefficient of sliding friction ( $\mu$ )**

The ratio of the magnitude of the sliding force to the magnitude of the perpendicular force between two objects/surfaces.

**coefficient of static friction ( $\mu$ )**

The ratio of the magnitude of the static force to the magnitude of the perpendicular force between two objects/surfaces.

**coefficient of utilization (CU)**

The value of the ratio of the luminous flux reaching the workplace to the total luminous flux emitted from a lighting source, as in the formula:

$$CU = \frac{\text{lumens reaching work surface}}{\text{lumens emitted by lamp}}$$

**coefficient of variation (Cv)**

A statistical parameter equal to the standard deviation of the sample data divided by the mean of the data. It is often expressed as the percent coefficient of variation. Another term for it is the *relative standard deviation*.

**coerce**

Compelled to compliance; constrained to obedience, or submission in a vigorous or forcible manner.

**COFC**

See *container on flatcar*.

**coffee break**

See *rest period*.

**cofferdam**

A temporary dam, usually of sheet piling, built to provide access to an area that is normally submerged.

**coffin**

(1) A box or container used to contain the remains of a deceased animal, most typically humans, in perpetuity. (2) See *cask*.

**coffin-box**

*Transportation (slang)*. Sleeper compartment independent of truck cab.

**cogeneration**

A power system that simultaneously produces both electrical and thermal energy from the same source.

**cognition**

Those higher mental activities or intellectual functions.

**cognitive disability**

Any disability involving literacy, mental capacity, learning, non-motor speech processes, or perceptual processes.



**cognitive dissonance**

A discrepancy which exists between a person's attitudes or statements and behaviors.

**cognitive reaction time**

That temporal interval between the receipt of a stimulus and the initiation of a response in a task which requires some type of choice and which is presumed to involve cognitive processing. Also referred to as *decision time*.

**cognitive restructuring**

A mental exercise in which attempts are made by an individual to change certain personal beliefs.

**cognizance**

Jurisdiction, or the exercise of jurisdiction, or power to try and determine causes. Judicial examination of a matter, or power and authority to make it.

**Cognizant Officer in Charge of Marine Inspection (OCMI)**

The Officer in Charge Marine Inspection in which the manufacturer responsible for defect notification (or other corrective action) is located. Commandant (G-MVI) directs specific actions for OCMI's to take in cases where a single cognizant OCMI cannot be identified.

**COH**

See *coefficient of haze*.

**COHb**

See *carboxyhemoglobin*.

**coherence**

A measure of the correlation at each frequency, or within each frequency band, between two time series signals.

**coherent**

A light beam is coherent when its waves have a continuous relationship among phases.

**cohort**

A group of individuals selected for scientific study in toxicology, epidemiology, or some other study focus.

**cohort analysis**

A method used in employment discrimination suits to test for race discrimination whereby all employees who start together at the same level are surveyed over the course of an observation period and their comparative progress in salary and promotion is evaluated.

**cohort study**

An epidemiological study where population subgroups with a common exposure to a suspected disease-causing agent are studied over time to determine the risk of developing disease.

**coincidental peak-day flow**

The volume of gas that moves through a pipeline or section thereof or is delivered to a customer on the day of the year when the pipeline system handles the largest volume of gas.

**coinsurance**

A relative division of risk between the insurer and the insured, dependent upon the relative amount of the policy and the actual value of the property insured, and taking effect only when the actual loss is partial and less than the amount of the policy; the insurer being liable to the extent of the policy for a loss equal to or in excess of that amount. Insurance policies that protect against hazards such as fire or water damage often specify that the owner of the property may not collect the full amount of insurance for a loss unless the insurance policy covers at least some specified percentage, usually 80 percent, of the replacement cost of the property. See also *insurance*.

**coinsurance clause**

Provision in insurance policy requiring a property owner to carry insurance up to an amount determined in accordance with the provisions of the policy.

**coke**

The solid carbon residue resulting from the distillation of coal or petroleum.

**coke tray aerator**

An aerator where water is sprayed or flows over coke-filled trays.

**cold**

(1) An acute and highly contagious virus infection of the upper respiratory tract. See also *common cold*. (2) A relatively low temperature as compared with the normal temperature; the lack of heat. A total absence of heat is absolute zero, at which all molecular motion ceases. A body temperature below 94°F results in impairment of the heat-regulating center in the hypothalamus. As the temperature drops, sleepiness and coma develop, and

as a result the central nervous system heat-control mechanism is depressed and shivering (a means of heat production) is prevented.

**cold clouds**

*See supercooled cloud.*

**cold fog**

*See supercooled cloud.*

**cold front**

A transition zone where a cold air mass advances and replaces a warm air mass.

**cold lime-soda softening**

Lime-soda softening process of water treatment at ambient temperatures.

**cold occlusion**

*See occluded front.*

**cold start fluorescent lamp**

*See instant start fluorescent lamp.*

**cold stress**

A form of environmental/thermal stress in which too much body heat is lost to a cold environment.

**cold wave**

A rapid fall in temperature within 24 hours that often requires increased protection for agriculture, industry, commerce, and human activities.

**cold work**

Mechanical or other type of work of a non-sparking nature that presents no risk of fire or explosion.

**colic**

A severe cramping in the abdomen.

**coliform bacteria**

Rod-shaped bacteria living in the intestines of humans and other warm-blooded animals.

**coliform index**

A rating of the purity of water based on the count of fecal bacteria present in it.

**coliform organism**

Microorganisms found in the intestinal tract of humans and animals. Their presence in water indicates potentially dangerous bacterial contamination.

**collagen**

A scleroprotein present in connective tissue of the body.

**collagen diseases**

A group of poorly understood diseases that cause deterioration of the connective tissues. Their cause is unknown, and the relationships among them are unclear. Apparently they are not infectious. Widely varying symptoms often make early diagnosis difficult. The four major forms of collagen diseases include systemic lupus erythematosus, periarteritis nodosa, scleroderma, and dermatomyositis. In addition to these four diseases, rheumatoid arthritis and rheumatic fever are frequently held to belong to the group.

**collapse**

(1) To break down or flatten. (2) A state of extreme prostration.

**collar cloud**

*See wall cloud.*

**collarbone**

*See clavicle.*

**collateral source rule**

Under this rule, if an injured person receives compensation for his/her injuries from a source wholly independent of the tort-feasor, the payment should not be deducted from the damages which he/she would otherwise collect from the tort-feasor. In other words, a defendant tort-feasor may not benefit from the fact that the plaintiff has received money from other sources as a result of the defendant's tort (e.g., sickness and health insurance).

**collection**

In solid waste management, the act of removing solid waste (or materials which have been separated for the purpose of recycling) from a central storage point.

**collection efficiency**

A measure of sampler performance as determined from the ratio of the material collected to the amount present in the sampled air. Typically expressed as a percentage.

**collection main**

The public sewer to which a building service or individual system is connected.

**collective bargaining**

(1) As contemplated by National Labor Relations Act (N.L.R.A.), a procedure looking toward the making of collective agreements between an employer and accredited representatives of union employees concerning

wages, hours, and other conditions of employment, and requires that both parties deal with each other with open and fair minds and sincerely endeavor to overcome obstacles existing between them to the end that employment relations may be stabilized and obstruction to the free flow of commerce prevented. (2) Negotiation between an employer and organized employees as distinguished from individuals, for the purpose of determining by joint agreement the conditions of employment.

**collective bargaining agreement**

An agreement between an employer and a labor union which regulates terms and conditions of employment. The joint and several contract of members of a union made by officers of the union as their agents establishing, in a general way, the reciprocal rights and responsibilities of employer, employees collectively, and the union. Such is enforceable by and against the union in matters which affect all members, particularly those who are employees of the other party to contract.

**collective bargaining unit**

All of the employees of a single employer, unless the employees of a particular department or division have voted otherwise.

**collective labor agreement**

Also called "trade agreement." Bargaining agreement as to wages and conditions of work entered into by groups of employees, usually organized into a brotherhood or union on one side and groups of employers or corporations on the other side.

**collector chain**

Chain used to convey sludge scraper in a rectangular sludge collector.

**collector highway**

Collector highways are those highways which link local highways to arterial highways.

**collector ring**

An assembly of slip rings for transferring electrical energy from a stationary to a rotating member.

**collectors**

*Transportation.* In rural areas, routes serving intra-county, rather than statewide travel. In urban areas, streets providing direct access to

neighborhoods as well as direct access to arterials.

**Collier's disease**

See *black lung disease*.

**collimate**

Make parallel to a certain path.

**collimated beam**

A beam of light or electromagnetic radiation with parallel waves.

**collimating optics**

Those optical components, such as lenses, used to produce parallel rays of light.

**collimation**

The confining of a beam of particles or rays to a defined cross-section.

**collimator**

A device for confining a beam, such as radiation, within a solid angle.

**collision**

(1) *General.* Striking together of two objects, one of which may be stationary. Act or instance of colliding; state of having collided. The term implies an impact or sudden contact of a moving body with an obstruction in its line of motion, whether both bodies are in motion or one stationary and the other, no matter which, is in motion. (2) *Railroad.* An impact between on-track equipment consists while both are on rails and where one of the consists is operating under train movement rules or is subject to the protection afforded to trains. This includes instances where a portion of a consist occupying a siding is fouling the main line and is struck by an approaching train. It does not include impacts occurring while switching within yards, as in making up or breaking up trains, shifting or setting out cars, etc.

**collision accident**

An accident involving a collision between a commercial motor vehicle and another object. Collision objects include trains, other motor vehicles, pedestrians, bicyclists, animals, and fixed objects.

**collision between aircraft**

Is so classified only when both aircraft are occupied. This includes collisions wherein both aircraft are airborne (midair); both on the ground or where one is airborne and the other

on the ground. A collision with a parked unoccupied aircraft is classified under the broad category of collision with objects.

**collision insurance**

A form of automobile insurance that covers loss to the insured vehicle from its collision with another vehicle or object, but not covering bodily injury or liability also arising out of the collision. A type of coverage which protects the insured for damages to his/her own property in an accident as contrasted with liability insurance which protects him/her in an action or claim for loss to another person's property. *See also insurance and convertible collision insurance.*

**collision with another vessel**

Any striking together of two or more vessels, regardless of operation at time of the accident, is a collision. (Also includes colliding with the tow of another vessel, regardless of the nature of the tow, i.e., surfboard, ski ropes, tow line, etc.)

**collision with fixed object**

The striking of any fixed object, above or below the surface of the water.

**collision with floating object**

Collision with any waterborne object above or below the surface that is free to move with the tide, current, or wind, except another vessel.

**collision with object**

(1) *Transportation.* An incident in which a transit vehicle strikes an obstacle other than a vehicle or person (e.g., building, utility pole). Reports are made if the accident results in a death, injury, or property damage over \$1,000. (2) *Aviation.* Where an occupied aircraft collides with a parked unoccupied aircraft or some other object.

**collision with other vehicles**

An incident involving one or more transit agency vehicles and any other vehicle. Report collisions between rail cars from coupling operations. Report fatalities or injuries that occur inside the transit vehicle as well as fatalities or injuries that occur inside other involved vehicles.

**collision with people**

An incident in which a transit vehicle strikes a person. Except where specifically indicated, collisions with people do not include suicide

attempts. Reports are made if the incident results in death, injury, or property damage over \$1,000.

**collision with vehicle**

An incident in which a transit vehicle strikes or is struck by another vehicle. Reports are made if the accident results in death, injury, or property damage over \$1,000.

**colloid**

Suspended solid with a diameter less than one micron that cannot be removed by sedimentation alone.

**collusion**

The behavior in which one person acts on behalf or to the benefit of himself/herself plus one or more others.

**colony-forming units (CFU)**

The number of bacteria present in a sample as determined in a laboratory plate count test where the number of visible bacteria colony units present is counted.

**colophony**

Rosin, such as that used in rosin core solder.

**color**

(1) A property of a surface or substance due to absorption of certain light rays and reflection of others within the range of wavelengths (roughly 370 to 760 mμ) adequate to excite the retinal receptors. (2) Radiant energy within the range of adequate chromatic stimuli of the retina, i.e., between the infrared and ultraviolet. (3) A sensory impression of one of the rainbow hues. (4) Water condition resulting from presence of colloidal material (see *apparent color*) or organic matter (see *true color*), measured by visual comparison with lab prepared standards. (5) That aspect of visual perception due solely to stimulation of the retinal cones by different wavelengths of electromagnetic radiation within the visible spectrum, and neglecting such aspects of a stimulus such as structure, size, and pattern.

**color additive**

Under the Federal Food, Drug and Cosmetic Act, a material which (a) is a dye, pigment, or other substance made by a process of synthesis or similar artifice, or extracted, isolated, or otherwise derived, with or without intermediate or final change of identity, from a vegetable, animal, mineral, or other source;

and (b) when added or applied to a food, drug, or cosmetic, or to the human body or any part thereof, is capable (alone or through reaction with other substance) of imparting color thereto.

**color assimilation**

A type of chromatic induction in which the difference or contrast between adjacent, differently colored fields diminishes. Also known as *Bezold spreading effect*.

**color blindness**

Inability to distinguish between certain colors. Genuine color blindness, a complete inability to see colors, is quite rare, affecting only one person in 300,000. Generally, the term describes some form of deficiency of color vision. The most common form is red-green confusion, which affects approximately 8 million people in the United States. There is no known cure for color deficiency. Color vision is a function of the cones in the retina of the eye, which are stimulated by light and transmit impulses to the brain. It is now thought that there are three types of cones, each type stimulated by one of the primary colors in light (red, green, and violet). Most cases of color deficiency affect either the red or green receptors, so that the two colors do not appear distinct from each other. *See also monochromasia, protanopia, deuteranopia, trianopia, monochromat, and color vision deficiency.*

**color coding**

The use of multiple colors for easier, more rapid visual identification, access, and/or processing of groups of organized materials.

**color constancy**

The phenomenon in which an object appears to have approximately the same color under different lighting conditions.

**color contrast**

*See chromatic contrast.*

**color contrast threshold**

*See chromatic contrast threshold.*

**color correction**

An adjustment made for the presentation of color image, usually to make perceived colors appear more natural.

**color deficiency**

*See color vision deficiency.*

**color discrimination**

The ability to perceive visual matches or note differences between hue, saturation, and brightness of two or more colored stimuli. Synonymous with *visual color discrimination*.

**color formulation**

The use of any one or combination of methods for making a desired color, including mathematical models, materials, colorants, particle sizes, absorption coefficients, and scattering coefficients.

**color grade**

A measure of the color appearance of a product, which may be used to determine price or quality.

**Color index**

A publication by the American Association of Textile Chemists and Colorists which provides a large number of reference dyes and pigments.

**color match**

(1) A condition in which two colored stimuli appear identical. (2) Make one variable color stimulus appear the same as a reference stimulus.

**color matching function**

*See tristimulus value.*

**color mixing**

The bending of colored lights or materials to alter an existing color. *See also additive color mixing and subtractive color mixing.*

**color ordering system**

Any method for the unambiguous interpolation between closely related colors within a large set of colors. Also referred to as *CIE color system, Munsell color system, Federal Standard 595a, coloroid color system, Inter-Society Color Council - National Bureau Color System.*

**color pseudo-stereopsis**

The visual perception of depth or of structure being out of the background plane from objects emitting or reflecting different dominant frequencies or wavelengths (especially blues and reds) within a dark background. Also referred to as *chromostereopsis*.

**color rendering**

That effect which a light source other than a standard illuminant has on the apparent color of an object.



**color rendering index**

See *CIE color rendering index*.

**color saturation**

A perceptual attribute pertaining to the strength or vividness of a particular hue.

**color system**

See *color ordering system*.

**color temperature (T<sub>c</sub>)**

The temperature (in Kelvin) of a radiating blackbody having the same chromaticity or spectral distribution as a given color light source.

**color temperature scale**

A scale by which the color of light emitted from an incandescent source is related to temperature, normally corresponding to the Kelvin scale. Also referred to as *temperature color scale*.

**color vision**

See *photopic vision*.

**color vision deficiency**

Having some form of reduced color sensation ability. See also *protanomaly*, *deuteranomaly*, *tritanomaly*, *color blindness*.

**color wheel**

A disk consisting of multiple colored and appropriately interleaved radial segments, each segment being a single color, for providing a desired perceptual color mixture when spun rapidly.

**colorant**

Any substance added to a product to provide a different color. Also referred to as *coloring agent*.

**Colorcurve®**

A color ordering system based on the physical brightness of gray levels.

**colorfulness**

That attribute of a visual sensation which appears to exhibit more or less of its hue.

**colorimeter**

A photoelectric instrument used to measure the amount of light of a specific wavelength absorbed by a solution.

**colorimetric tube**

See *detector tube*.

**colorimetry**

An analytical method in which color is developed in a reaction between the sorbent and a contaminant with the resulting color intensity measured photometrically for determining contaminant concentration. See also *photometry*.

**coloring agent**

See *colorant*.

**colorless**

Having no chromatic color; achromatic.

**coloroid color system**

A color ordering system which attempts to provide equal aesthetic spacing between colors and is based on specifications of hue (A), chromatic content (T), and lightness (V). See also *color ordering system*.

**column**

A vertical arrangement of numbers, text, or other information in a matrix or table.

**coma**

A state of unconsciousness from which the person cannot be aroused by physical stimulation. See also *unconsciousness*.

**COMBIMAN**

See *Computer Biomechanical Man*.

**combination chain**

Chain used in conveyor applications, having cast block links with steel pins and connecting bars.

**combination export manager**

A firm which acts as an export sales agent for two or more U.S. manufacturers, all of which are noncompetitive with the others.

**combination packaging**

A combination of packaging, for transport purposes, consisting of one or more inner packagings secured in a non-bulk outer packaging. It does not include a composite packaging.

**combination passenger and cargo ships**

Ships with a capacity for 13 or more passengers.

**combination tone**

An apparent secondary tone heard when two pure primary tones having widely separated frequencies are presented simultaneously.



**combination trailer**

A trailer used to handle freight in the transportation of goods for others; excludes house trailers, light farm trailers, and car trailers.

**combination truck**

(1) Consists of a power unit (a truck tractor) and one or more trailing units (a semitrailer or trailer). The most frequently used combination is popularly referred to as a "tractor-semitrailer" or "tractor trailer." (2) A tractor not pulling a trailer; a tractor pulling at least one full or semitrailer, or a single-unit truck pulling at least one trailer.

**combined available chlorine**

The concentration of chlorine combined with ammonia as chloramine and still available to oxidize organic matter.

**combined center**

An air traffic facility which combines the functions of an air route traffic control center and a radar approach control facility.

**combined household energy expenditures**

(1) The total amount of funds spent for energy consumed in, or delivered to, a housing unit during a given period of time and for fuel used to operate the motor vehicles that are owned or used on a regular basis by the household. (2) The total dollar amount for energy consumed in a housing unit includes state and local taxes but excludes merchandise repairs or special service charges. Electricity and natural gas expenditures are for the amount of those energy sources consumed. Fuel oil, kerosene, and LPG expenditures are for the amount of fuel purchased, which may differ from the amount of fuel consumed. (3) The total dollar amount of fuel spent for vehicles is the product of fuel consumption and price.

**combined motions**

Two or more parallel elemental movements performed by a given body segment.

**combined sewer overflow (CSO)**

Wastewater flow that consists of storm water and sanitary sewage.

**combined sewers**

A sewer system that carries both sewage and stormwater runoff. Normally, its entire flow goes to a waste treatment plant, but during a heavy storm, the stormwater volume may be

so great as to cause overflows. When this occurs, untreated mixtures of storm water and sewage may flow into receiving waters. Stormwater runoff may also carry toxic chemicals from industrial areas or streets into the sewer system.

**combined work**

A job or task involving any combination of two or more workers or workers and multiple machines.

**combustible**

Capable of being ignited with resultant burning or explosion.

**combustible dust**

A dust that is capable of undergoing combustion or of burning when subjected to a source of ignition.

**combustible gas indicator (CGI)**

An instrument for determining the presence and concentration of a combustible and/or flammable hydrocarbon vapor/gas-air mixture relative to the lower explosive limit of the substance. Essentially all combustible or flammable vapors or gases can be detected with this type of device, but their concentration cannot be determined accurately unless the instrument has been calibrated for the specific substance or mixture. It is essential that adequate oxygen be present (i.e., above approximately 12%) for the proper operation of this type of detector.

**combustible gases**

The mixture of gases and vapors produced by burning.

**combustible liquid**

Any liquid that has a flash point at or above 100 degrees Fahrenheit and below 200 degrees Fahrenheit.

**combustibles**

Refers to materials that can be ignited at a specific temperature in the presence of air to release heat.

**combustion**

A chemical process that involves oxidation sufficient to produce light or heat. Also referred to as *fire*.

**combustion product**

Substance produced during burning or oxidation of a material.

**comfort**

(1) A state of subjective well-being in relation to one's external environment. (2) The absence of significant or excessive physical and/or mental stressors.

**comfort-discomfort boundary**

That threshold luminance in a glare condition at which visual discomfort becomes apparent. Synonymous with *borderline between comfort and discomfort*.

**Comfort-Health Index (CHI)**

A table based on a computed effective temperature, assuming a 50% relative humidity, for determining expected thermal sensations.

**comfort rating**

An expressed measure of the level of satisfaction with one or more aspects of an individual's current environment.

**comfort rating scale**

Any of a number of ranking techniques for rating comfort.

**comfort ventilation**

Airflow intended to remove heat, odors, smoke, etc. from an inside location and provide a comfortable environment for occupants.

**comfort zone**

The range of effective temperatures, as identified by ASHRAE, over which the majority (50% or more) of adults feel comfortable. ASHRAE has identified combinations of dry- and wet-bulb temperatures and air movement for summer and winter conditions that provide comfort for room occupants.

**comfortable reach**

That range through which an individual can reach without straining excessively against gravity or a restraint.

**comma cloud**

A band of organized cumuliform clouds that looks like a comma on a satellite photograph.

**command**

Any statement which may potentially be input to a computer system and which calls for one or more specific actions.

**command area**

A region within a display in which user input commands are presented for viewing.

**command error**

An inappropriate or incorrect command entered into a computer.

**command input**

The entering of a command to a system.

**command language**

A clearly defined specific set of terms for directing control of a computer.

**command line**

A command area composed of a single line on a text display which is reserved for user-entered commands.

**command post**

Facility located at a safe distance upwind from an accident site, where the on-scene coordinator, responders, and technical representatives can make response decisions, deploy manpower and equipment, maintain liaison with the news media, and handle communications.

**comment period**

Time provided for the public to review and comment on a proposed EPA action or rule-making after it is published in the Federal Register.

**commerce**

(1) The exchange of goods, productions, or property of any kind; the buying, selling, and exchanging of articles. Also, the transportation of persons and property by land, water, and/or air. (2) Under the Toxic Substances Control Act (TSCA), the term means trade, traffic, transportation, or other commerce between a place in a state and any other place outside a state or actions which might affect such trade, traffic, or commerce. (3) Any trade, traffic or transportation within the jurisdiction of the United States between a place in a state and a place outside of such state, including a place outside of the United States and trade, traffic, and transportation in the United States which affects any trade, traffic, and transportation described in the first part of this definition.

**commerce clause**

A provision in the U.S. Constitution (Art. I, § 8, cl. 3) granting Congress the power to authorize administrative agencies such as OSHA to act. Specifically, the commerce

clause grants Congress the power "to regulate commerce ...among the States."

**Commerce Department**

Part of the executive branch of the federal government headed by a cabinet member (Secretary of Commerce) which is concerned with the promotion of domestic and international business and commerce. It may also be a department of a state government with similar functions.

**commerce power**

*See police power.*

**commercial**

Relates to or is connected with trade and traffic or commerce in general; is occupied with business and commerce.

**commercial activity**

Term includes any type of business or activity which is carried on for a profit.

**commercial air carrier**

An air carrier certificated in accordance with Federal Aviation Regulations (FAR) Part 121 or 127 to conduct scheduled services on specified routes. These air carriers may also provide non-scheduled or charter services as a secondary operation. Four carrier groupings have been designated for statistical and financial data aggregation and analysis: *Majors* (annual operating revenues greater than \$1 billion), *Nationals* (annual operating revenues between \$100 million and \$1 billion), *Large Regionals* (annual operating revenues between \$10 million and \$99,999,999), *Medium Regionals* (annual operating revenues less than \$10 million).

**commercial airport**

A public airport which is determined to enplane annually 2,500 or more passengers and receive scheduled passenger service of aircraft. *See also commercial service airport.*

**commercial body**

*Transportation.* A body type not normally furnished by the original equipment manufacturer as a standard option but available from other manufacturers (e.g., dump, compactor tank, and utility).

**commercial driver's license (CDL)**

A license issued by a state or other jurisdiction, in accordance with the standards contained in 49 CFR 383 to an individual, which

authorizes the individual to operate a class of a commercial motor vehicle.

**commercial driver's license information system (CDLIS)**

A database containing information on CDLs issued in the United States. Established by Federal Highway Administration (FHWA) pursuant to section 12007 of the Commercial Motor Vehicle Safety Act of 1986.

**commercial insurance**

Indemnity agreements, in the form of insurance bonds and policies, whereby parties to commercial contracts are, to a designated extent, guaranteed against loss by reason of a breach of contractual obligations on the part of the other contracting party. To this class belong policies of contract and title insurance. *See also insurance.*

**commercial invoice**

A document of the transaction between a buyer and a seller.

**commercial law**

A phrase used to designate the whole body of substantive jurisprudence (e.g., Uniform Commercial Code; Truth in Lending Act) applicable to the rights, intercourse, and relations of persons engaged in commerce, trade, or mercantile pursuits.

**commercial motor vehicle (CMV)**

(1) *Under 49 CFR 383.* A motor vehicle or combination of motor vehicles used in commerce to transport passengers or property if the motor vehicle: a) has a gross combination weight rating of 26,001 or more pounds inclusive of a towed unit with a gross vehicle weight rating of more than 10,000 pounds; or b) has a gross vehicle weight rating of 26,001 or more pounds; or c) is designed to transport 16 or more passengers, including the driver; or d) is of any size and is used in the transportation of materials found to be hazardous for the purposes of the Hazardous Materials Transportation Act and which require the motor vehicle to be placarded under the Hazardous Materials Regulations (49 CFR 172, subpart F). (2) *Under 49 CFR 350 and 49 CFR 390.* Any self-propelled or towed vehicle used on public highways in interstate commerce to transport passengers or property when: a) the vehicle has a gross vehicle weight rating or gross combination weight

rating of 10,001 or more pounds; or b) the vehicle is designed to transport more than 15 passengers, including the driver; or c) the vehicle is used in the transportation of hazardous materials in a quantity requiring placarding under regulations issued by the Secretary of Transportation under the Hazardous Materials Transportation Act (49 U.S.C. App. 1801-1813).

**commercial motor vehicle traffic violation**

*See serious traffic violation.*

**commercial operator**

A person who, for compensation or hire, engages in the carriage by aircraft in air commerce of persons or property, other than as an air carrier or foreign air carrier or under the authority of Part 375 of this title. Where it is doubtful that an operation is for *compensation or hire*, the test applied is whether the carriage by air is merely incidental to the person's other business or is, in itself, a major enterprise for profit.

**commercial passengers**

Number of revenue and nonrevenue passengers arriving or departing via commercial aircraft and helicopters on a scheduled or non-scheduled flight.

**commercial pilot**

A commercial pilot may act as pilot-in-command of an aircraft carrying passengers for compensation or hire and act as pilot-in-command in an aircraft that is being operated for compensation or hire.

**commercial rental motor vehicle**

A motor vehicle obtained from a commercial source such as the Military Traffic Management Command (MTMC) rental car agreements for a period of 60 days or less.

**commercial sector**

As defined economically, consists of business establishments that are not engaged in transportation or in manufacturing or other types of industrial activity (agriculture, mining, or construction). Commercial establishments include hotels, motels, restaurants, wholesale businesses, retail stores, laundries, and other service enterprises; religious and nonprofit organizations (health, social, and educational institutions); and federal, state, and local governments. Street lights, pumps, bridges, and public services are also included if the estab-

lishment operating them is considered commercial.

**commercial service airport**

A public airport that is determined by the Secretary [of Transportation] to enplane annually 2,500 or more passengers and receive scheduled passenger service of aircraft. The commercial service airports are further categorized as *primary* and *non-primary*. *See also commercial airport.*

**commercial service non-primary airport**

A commercial service airport which is determined by the Secretary [of Transportation] to enplane between 2,500 and 10,000 passengers annually.

**commercial service primary airport**

A commercial service airport which is determined by the Secretary [of Transportation] to have more than 10,000 passengers enplaned annually. A *primary airport* can be further classified as a large, medium, small, or non-hub.

**commercial use**

Use in commercial enterprise providing salable goods or services.

**commercial waste**

Solid waste from nonmanufacturing establishments such as office buildings, markets, restaurants, and stores.

**comminuted**

Broken into small pieces, as a type of bone fracture. *See also comminutor.*

**comminution**

Mechanical shredding or pulverizing of waste. Used in both solid waste management and wastewater treatment.

**comminutor**

A circular screen with cutters that grinds large sewage solids into smaller, settling particles.

**commission**

(1) A warrant or authority, issuing from the government, or one of its departments, or a court, empowering a person or persons named to do certain acts, or to exercise the authority of an office. An example would be the *Occupational Safety and Health Review Commission (OSHRC)*. (2) An incentive plan which represents an award to the employee of some

specified portion of the selling price of some service or product.

**commission to examine witnesses**

A commission issued out of the court in which an action is pending, to direct the taking of the depositions of witnesses who are beyond the territorial jurisdiction of the court.

**commissioned agent**

An agent who wholesales or retails a refined petroleum product under a commission arrangement. The agent does not take title to the product or establish the selling price, but receives a percentage of fixed fee for serving as an agent.

**commissioner**

A person to whom a commission is directed by the government or a court. A person with a commission. An officer who is charged with the administration of laws relating to some particular subject matter, or the management of some bureau or agency of the government. Member of a commission or board. A specially appointed officer of court.

**commissioning**

The initial acceptance process in which the performance of equipment/system is evaluated, verified, and documented to assure its proper operation in accordance with codes, standards, design, specifications, etc.

**committee**

(1) A person, or an assembly or board of persons, to whom the consideration, determination, or management of any matter is committed or referred, as by a court or legislature. (2) An individual or body to whom others have delegated or committed a particular duty, or who have taken on themselves to perform it in the expectation of their act being confirmed by the body they profess to represent or act for.

**commodity**

(1) *General*. Something bought and sold. Anything of use or profit. (2) *Transportation*. The classification of commodities is based on that prescribed by the Canadian Transport Commission and the Interstate Commerce Commission of the U.S.

**commodity classes**

The primary commodities involved in waterways transportation are fuels, chemicals, grains, and metals.

**common authority**

Refers to that entity at a multi-employer worksite (usually the general contractor or owner) who has the authority to permit entry of an OSHA representative to conduct an inspection thereby waiving any right or expectation of privacy that other contractors working on the property may have.

**common carrier**

Those that hold themselves out or undertake to carry persons or goods of all persons indifferently, or of all who choose to employ it. A for-hire carrier that holds itself out to serve the general public at reasonable rates and without discrimination. The carrier must secure (from ICC and FMC) a certificate of public convenience and necessity to operate.

**common cause failure analysis**

A system safety analytical technique (also known as *common cause analysis*) used primarily in the evaluation of multiple failures that have the occurrence of a single event as a common causal factor.

**common cold**

An acute and highly contagious virus infection of the upper respiratory tract, also called acute rhinitis. At least 20 identifiable viruses have been found to cause colds, and they may attack anyone with lowered resistance. Cold viruses are resistant to present antibiotics, and there is no really effective preventive vaccine as yet that will work against them in all situations for all people.

**common instrument flight rules room**

A highly automated terminal radar control facility. It provides terminal radar service in an area encompassing more than one major airport that accommodates instrument flight rule (IFR) operations.

**common knowledge**

Refers to what the court may declare applicable to action without necessity of proof. It is knowledge that every intelligent person has, and includes matters of learning, experience, history, and facts of which judicial notice may be taken.

**common laboratory contaminants**

Certain organic chemicals (considered by EPA to be acetone, 2-butanone, methylene chloride, toluene, and phthalate esters) that are commonly used in the laboratory and thus may be

introduced into the sample from a laboratory cross-contamination, not from the site.

**common law**

As distinguished from *statutory law* created by the enactment of legislatures, the common law comprises the body of law that develops and derives through judicial decisions, as distinguished from legislative enactment. It consists of those principles, usage, and rules of action applicable to government and security of persons and property which do not rest for their authority upon any express and positive declaration of the will of the legislature.

**common nuisance**

A nuisance is a common nuisance or a *public nuisance*, the terms being synonymous, where it affects the rights enjoyed by citizens as part of the public, that is, the rights to which every citizen is entitled.

**common point**

*Aviation.* A significant point over which two or more aircraft will report passing or have reported passing before proceeding on the same or diverging tracks. To establish/maintain longitudinal separation, a controller may determine a common point not originally in the aircraft's flight plan and then clear the aircraft to fly over the point.

**common return circuit**

A term applied where one wire is used for the return of more than one electric circuit.

**common route**

*Aviation.* That segment of a North American route between the inland navigation facility and the coastal fix.

**common sense initiative**

An EPA incentive program initiated in 1994 to bring together all levels of government officials, environmentalists, and industry leaders to create strategies that work cleaner, cheaper, and smarter to protect the health of the U.S. population and its natural resources.

**common traffic advisory frequency (CTAF)**

A frequency designed for the purpose of carrying out airport advisory practices while operating to or from an airport without an operating control tower. The CTAF may be a UNICOM, Multicom, F99, or I tower frequency and is identified in appropriate aeronautical publications.

**communicable**

As applied to disease, it is one that results from the spread or transmission of an infectious agent. The causative agent of the disease can be transmitted from one infected individual to another. Some diseases of animals are transmissible to man and are thus considered *communicable diseases*.

**communicable disease**

A disease spread by direct contact with the infectious agents causing it. Modes of transmission include a) direct contact with body excreta or discharges from an ulcer, open sore, etc.; b) indirect contact with inanimate objects such as drinking glasses, toys, tools, clothing, etc.; c) by vectors (flies, mosquitoes, or other insects capable of spreading the disease).

**communication**

The meaningful interchange using some form of language or other set of signals between individuals, groups, or instrumentation.

**community**

*Aviation.* A city, group of cities, or a Standard Metropolitan Statistical Area receiving scheduled air service by a certificated route air carrier.

**community relations**

The EPA effort to establish two-way communication with the public to create understanding of EPA programs and related actions, to assure public input into decision-making processes related to affected communities, and to make certain that the Agency is aware of and responsive to public concerns. Specific community relations activities are required in relation to Superfund remedial actions.

**Community Right-to-Know**

Shortened name for the *Emergency Planning and Community Right-to-Know Act of 1986*, also known as Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). Covers facilities that keep specified quantities of extremely hazardous chemicals and contains reporting and emergency planning requirements.

**community water system**

A public water system which serves at least fifteen service connections used by year-



round residents or regularly serves at least twenty-five year-round residents.

**commutation ticket**

In rail systems, a ticket sold at a reduced rate for a fixed or unlimited number of trips in a designated area during a specified time period.

**commute**

Regular travel between home and a fixed location (e.g., work, school).

**commuter**

*General.* A person who travels regularly between home and work or school.

**commuter air carrier**

(1) *FAA1 and FAA14.* A Federal Aviation Regulation (FAR) Part 135 operator who carries passengers in an aircraft with a maximum of 60 seats, on at least five round trips per week or at least one route between two more points, or that carries mail according to its published flight schedule that specifies the times, days of the week, and places between which those flights are performed. (2) *FAA11.* An air carrier that operates aircraft with 30 seats or less and a maximum payload capacity of 7,500 pounds or less and performs at least five round trips per week between two or more points and publishes a flight schedule. (3) *FAA2 and FAA9.* An air taxi that performs at least five scheduled round trips per week between two or more points or carries mail. (4) *FAA6.* An air taxi operator which performs at least five round trips per week between two or more points and publishes flight schedules which specify the times, days of the weeks, and plans between which such flights are performed.

**commuter authority**

*Railroad.* Any state, local, regional authority, corporation, or other entity established for purposes of providing commuter rail transportation (including, but not necessarily limited to, the New York Metropolitan Transportation Authority, the Connecticut Department of Transportation, the Maryland Department of Transportation, the Southeastern Pennsylvania Transportation Authority, the New Jersey Transit Corporation, the Massachusetts Bay Transportation Authority, the Port Authority Trans-Hudson Corporation, and any successor agencies) and any entity

created by one or more such agencies for the purpose of operating, or contracting for the operation of, commuter rail transportation.

**commuter bus service**

Fixed route bus service, characterized by service predominantly in one direction during peak periods, limited stops, use of multi-ride tickets, and routes of extended length, usually between the central business district and outlying suburbs. Commuter bus service may also include other service, characterized by a limited route structure, limited stops, and a coordinated relationship to another mode of transportation.

**commuter lane**

*See high-occupancy vehicle lane.*

**commuter rail**

(1) Long-haul passenger service operating between metropolitan and suburban areas, whether within or across the geographical boundaries of a state, usually characterized by reduced fares for multiple rides, and commutation tickets for regular, recurring riders. (2) Urban passenger train service for short distance travel between a central city and adjacent suburbs. Does not include heavy rail or light rail service. (3) Railroad local and regional passenger train operations between a central city, its suburbs, and/or another central city. It may be either locomotive-hauled or self-propelled, and is characterized by multi-trip tickets, specific station-to-station fares, railroad employment practices, and usually only one or two stations in the central business district. Also known as *suburban rail*.

**commuter rail car**

A rail passenger car obtained by a commuter authority for use in commuter rail transportation.

**commuter rail locomotives**

Commuter rail vehicles used to pull or push commuter rail passenger coaches. Locomotives do not carry passengers themselves.

**commuter rail passenger coaches**

Commuter rail passenger vehicles not independently propelled and requiring one or more locomotives for propulsion.

**commuter rail self-propelled passenger cars**

Commuter rail passenger vehicles not requiring a separate locomotive for propulsion.

**commuter rail transportation**

Short-haul rail passenger service operating in metropolitan and suburban areas, whether within or across the geographical boundaries of a state, usually characterized by reduced fare, multiple ride, and commutation tickets and by morning and evening peak period operations. This term does not include light or rapid rail transportation.

**commuter railroad**

Those portions of mainline railroad (not electric railway) transportation operations which encompass urban passenger train service for local travel between a central city and adjacent suburbs. Commuter railroad service using both locomotive hauled and self-propelled railroad passenger cars is characterized by multi-trip tickets, specific station-to-station fares, and usually only one or two stations in the central business district. Also known as *suburban railroad*.

**commuter train**

A short-haul passenger train operating on track which is part of the general railroad system of transportation, within an urban, suburban, or metropolitan area. It includes a passenger train provided by an instrumentality of a state or political subdivision thereof. Includes commuter trains and passenger trains other than elevated trains and subways. Includes local and commuter train service. Does not include intercity service by Amtrak.

**compact bone**

The dense outer tissue portion of a bone.

**compaction**

Reduction of the bulk of solid waste by rolling and tamping.

**compactor collection vehicle**

A vehicle with an enclosed body containing mechanical devices that convey solid waste into the main compartment of the body and compress it into a smaller volume of greater density.

**company automotive outlet**

Any retail outlet selling motor fuel under a reporting company brand name. 1) *Company operated*. A company retail outlet which is operated by salaried or commissioned personnel paid by the reporting company. 2) *Lessee*. An independent marketer who leases the station and land and has use of tanks, signs, etc.

A lessee dealer typically has a supply agreement with a refiner or a distributor and purchases products at dealer tank wagon prices. The term "lessee dealer" is limited to those dealers who are supplied directly by a refiner or any affiliate or subsidiary company of a refiner. "Direct supply" includes use of commission agent common carrier delivery. 3) *Open*. An independent marketer who owns or leases (from a third party who is not a refiner) the station or land of a retail outlet and has use of tanks, pumps, signs, etc. An open dealer typically has a supply agreement with a refiner or a distributor and purchases products at or below dealer tank wagon prices.

**company outlet**

Any retail outlet (e.g., service station) selling gasoline or diesel fuel that has the ability to set the retail product price and directly collect all or part of the retail margin. This category includes retail outlets being operated by salaried employees of the company and/or its subsidiaries and affiliates, and/or involving personnel services contracted by the company.

**comparative negligence**

Under comparative negligence statutes or doctrines, negligence is measured in terms of percentage, and any damages allowed shall be diminished in proportion to the amount of negligence attributable to the person for whose injury, damage, or death recovery is sought.

**comparison group**

See *control group*.

**comparison stimulus**

Any variable stimulus which is presented in addition to a reference stimulus in certain experimental designs for determining differences in thresholds.

**compass**

(1) A sliding caliper. (2) A magnetic sensing device used in navigation for determining one's heading relative to magnetic north.

**compass calibration pad**

An airport facility used for calibrating an aircraft compass.

**compass locator**

*Aviation*. A low power, low or medium frequency (L/MF) radio beacon installed at the site of the outer or middle marker of an in-

strument landing system (ILS). It can be used for navigation at distances of approximately 16 miles or as authorized in the approach procedure. *See also middle marker and outer marker.*

#### **compass rose**

*Aviation.* A circle, graduated in degrees, printed on some charts or marked on the ground at an airport. It is used as a reference to either true or magnetic direction.

#### **compatibility**

(1) A measure of how well spatial movements of controls, display behavior, or conceptual relationships meet human expectations. (2) That combination of characteristics and attributes which permit two or more individuals, groups, or systems to work together without significant interference of conflict. (3) The ability of two or more materials or substances to come in contact without altering their structure or causing an unwanted reaction in terms such as permeability, flammability, ignition, combustion, functional or material degradation, contamination, toxicity, pressure, temperature, shock, oxidation, or corrosion.

#### **compatibility group letter**

A designated alphabetical letter used to categorize different types of explosive substances and articles for purposes of stowage and segregation.

#### **compatible or compatibility**

In relation to state laws and regulations pertaining to commercial motor vehicle safety, having the same effect as the Federal Motor Carrier Safety Regulations (FMCSR) or Federal Hazardous Materials Regulations (FHMR) in that those state rules are either identical or fall within the tolerance guidelines in appendix C, 49 CFR 350.

#### **compensable death**

Within workers' compensation acts, is one which happens to an employee from injury by an accident arising out of and in the course of employment.

#### **compensable injury**

Such an injury, within workers' compensation acts, is one caused by an accident arising out of and in the course of the employment and for which the injured employee is entitled to receive compensation under such law.

#### **compensation**

(1) Indemnification; payment of damages; making amends; making whole; giving an equivalent or substitute of equal value. That which is necessary to restore an injured party to his/her former position. (2) Remuneration for services rendered, whether in salary, fees, or commissions. (3) A movement of a part of the body to restore or maintain equilibrium as another body part moves. (4) Any behavior which attempts to minimize the effect of a weakness in one process by relying on another, stronger process or improving another process.

#### **compensation plan**

That rule or set of rules which an organization follows in setting payment rates for jobs or type of work done.

#### **compensatory**

Pertaining to the use of error information only in generating control inputs.

#### **compensatory damages**

That monetary value awarded a victim by a court to pay for his/her injuries or losses. Damages awarded a person as compensation, indemnity, or restitution for harm sustained by him/her. Compensatory or actual damages consist of both general and special damages. General damages are the natural, necessary, and usual result of the wrongful act or occurrence in question. Special damages are those which are the natural, but not the necessary and inevitable result of the wrongful act. *See also damages, general damages, special damages, and punitive damages.*

#### **competency**

In the law of evidence, the presence of those characteristics, or the absence of those disabilities, which render a witness legally fit and qualified to give testimony in a court of justice; applied, in the same sense, to documents or other written evidence. Competency differs from credibility. The former denotes the personal qualification of the witness; the latter his/her veracity. A witness may be competent, and yet give incredible testimony; he/she may be incompetent, and yet his/her evidence, if received, may be perfectly credible. Competency is for the court, credibility is for the jury. *See also credibility.*

**competent**

Duly qualified; answering all requirements; having sufficient capacity, ability, or authority; possessing the requisite physical, mental, natural, or legal qualifications; able; adequate; suitable; sufficient; capable; legally fit.

**competent authority**

*Transportation.* A national agency responsible under its national law for the control or regulation of a particular aspect of the transportation of hazardous materials (dangerous goods). The term *appropriate authority*, as used in the International Civil Aviation Organization (ICAO) Technical Instructions, has the same meaning as Competent Authority. The Associate Administrator [of the Research and Special Programs Administration (RSPA)] for Hazardous Materials Safety is the competent authority for the United States.

**competent witness**

One who is legally qualified to be heard to testify in a case. A witness may not testify to a matter unless evidence is introduced sufficient to support a finding that the witness has personal knowledge of the matter.

**competition**

That condition in which more than one person or group vies against each other for a limited number of prizes, positions, market share, or other reward.

**compilation**

The development of higher order skills from lower level processes.

**complainant**

One who applies to the courts for legal redress by filing a complaint (i.e., the plaintiff). Also, one who instigates prosecution or who professes accusation against a suspected person.

**complaint**

The original or initial pleading by which an action is commenced under codes or the Rules of Civil Procedure. The pleading which sets forth a claim for relief.

**complementary color**

That perceptual color on the opposite side of the achromatic point in the chromaticity diagram from a given color, which, when mixed in proper proportions, will produce a gray or white. *See also complementary wavelength.*

**complementary wavelength (c)**

The wavelength designated on the spectrum locus of a chromaticity diagram by an extension of the line determining the dominant wavelength in the opposite direction from the achromatic point. *See also complementary color.*

**complete blood count (CBC)**

A measure of the hemoglobin concentration, and the number of red blood cells, white blood cells, and platelets in one cubic millimeter of blood. In addition, the proportion of various white blood cells is determined and the appearance of red and white cells is noted.

**complete carcinogen**

A carcinogen which produces cancer without subsequent exposure to any other substance.

**complete diffusion**

A condition in which a diffusing medium so scatters the incident flux that no image can be formed from the transmitted flux.

**complete menu hierarchy**

A menu hierarchy having the same number of menus along each branch from top to bottom.

**complete radiator**

*See blackbody.*

**completion**

*Refining.* The installation of permanent equipment for the production of oil or gas. If a well is equipped to produce only oil or gas from one zone or reservoir, the definition of a well (classified as an oil well or gas well) and the definition of a completion are identical. However, if a well is equipped to produce oil and/or gas separately from more than one reservoir, a well is not synonymous with a completion.

**complex carbohydrates**

Carbohydrates with a relatively complex molecular structure. Known also as polysaccharides. Bread, rice, and pasta are primarily complex carbohydrates.

**complex projects**

Those projects requiring the coordination of numerous tasks and personnel or those that involve unusual logistics to complete the work.

**complex reaction time**

The temporal interval required to react to a stimulus situation when a choice or discrimination needs to be made before responding.

**complex sound**

Any sound composed of a large number of multiple sinusoidal components and their harmonics/overtones.

**complex spectrum**

Those coefficients resulting from a Fourier or other transform of a time series signal which contain both real and complex values.

**complex tone**

An auditory signal composed of multiple simple sinusoidal components with different frequencies.

**complexion**

The color and overall appearance of facial skin.

**compliance**

(1) To comply with both laws and general organizational requirements. *See also [compliance program](#)*. (2) A measure of the softness of a system or structure, represented by the reciprocal of the stiffness.

**compliance coating**

A coating whose volatile organic compound content does not exceed that allowed by regulation.

**compliance monitoring**

A strategy or technique to determine compliance with a government standard. One compliance monitoring method is to identify the maximally exposed worker and, if that exposure is less than the standard, then all worker exposures are assumed to be below the exposure limit.

**compliance plan**

(1) *OSHA*. A documented approach to OSHA compliance required by some specific standards, such as Hazard Communication, which essentially establishes the employer's intended methods of achieving compliance. (2) *EPA-CAA*. Either a statement that the source will comply with all applicable requirements under CAA; or where applicable, a schedule and description of the method or methods for compliance and certification by the owner or operator that the source is in compliance with the requirements of CAA.

**compliance procedures manual**

A manual used by the corporate compliance officer and other compliance managers to monitor and audit compliance with the corporate code and supplemental compliance mate-

rials. Often includes a management policy stating the organization's intentions to comply with the law, areas of the law related to the organization's operations, and a statement of employees' and agents' requirements to follow this policy. May also include detailed operating procedures to instruct the employees or agents within particular areas of the organization.

**compliance program**

A tool for achieving an objective which is the responsibility of management: the proper control of the organization, its employees, and its assets. The creation of a system of internal controls to safeguard the interests of the organization, its investors, and the public's image of the corporation. An effectively administered program will deter illegal activity by employees, provide an effective mechanism and establish procedures for dealing with misconduct, generally resulting in more favorable treatment for the organization by enforcement authorities if illegal conduct is discovered and reported, and make it more likely that the disclosure of illegal activity need not result in a finding that the corporation is "presently responsible." *See also [effective compliance program](#), [compliance plan](#), and [compliance program inventory](#)*.

**compliance program inventory**

A liability and risk-assessment inventory of an organization which includes the legal requirements and areas which a company may want to consider for its compliance program. Legal risk areas include, among many, OSHA, RCRA, and CAA. *See also [compliance program](#)*.

**Compliance Safety and Health Officer (CSHO)**

A person authorized by the Occupational Safety and Health Administration, U.S. Department of Labor, to conduct inspections.

**compliance schedule**

A negotiated agreement between a pollution source and a government agency that specifies dates and procedures by which a source will reduce emissions and, thereby, comply with a regulation.

**compliance strategy**

Method an employer will develop and implement to achieve and maintain compliance with a regulation. It may include engineering



and administrative controls, adherence to established procedures and work practices, the use of personal protective equipment, as well as training of personnel regarding hazards, and making available hazard information (i.e., signs, materials safety data sheets, hazard communication training, etc.) to personnel.

#### **compliance training**

Training to educate senior management regarding the organization's mandatory standards and procedures and overall compliance program, as well as employees or agents on the Code of Conduct and other issues or procedures. Also includes detailed training tailored to each employee's job.

#### **complimentary metal oxide semiconductor**

A type of detector used in the detection of gases or vapors.

#### **component**

(1) *Systems Engineering*. A functional part of a subsystem or equipment which is essential to operational completeness of the subsystem or equipment and which may consist of a combination of parts, assemblies, accessories, and attachments. (2) *Hazardous Materials Management*. Any part, or system of parts functioning as a unit, including, but not limited to, piping, processing equipment, containers, control devices, impounding systems, lighting, security devices, fire control equipment, and communication equipment, whose integrity or reliability is necessary to maintain safety in controlling, processing, or containing a hazardous fluid. (3) *Hydraulics*. Any part of a pipeline which may be subjected to pump pressure including, but not limited to, pipe, valves, elbows, tees, flanges, and closures.

#### **composite flight plan**

A flight plan which specifies Visual Flight Rules (VFR) operation for one portion of flight and Instrument Flight Rules (IFR) for another portion. It is used primarily in military operations.

#### **composite maintenance**

The integration or simultaneous use of several types of maintenance.

#### **composite material**

The combinations of materials differing in composition or form on a macroscale. The constituents retain their identities in the com-

posite. Normally, the constituents can be physically identified, and there is an interface between them.

#### **composite packaging**

A packaging consisting of an outer packaging and an inner receptacle, so constructed that the inner receptacle and the outer packaging form an integral packaging. Once assembled it remains thereafter an integrated single unit; it is filled, stored, shipped, and emptied as such.

#### **composite route system**

*Aviation*. An organized oceanic route structure, incorporating reduced lateral spacing between routes, in which composite separation is authorized. *See also composite separation*.

#### **composite sample**

A water or wastewater sample made up of a number of samples taken at regular intervals over a 24-hour period.

#### **composite separation**

*Aviation*. A method of separating aircraft in a composite route system where, by management of route and altitude assignments, a combination of half the lateral minimum specified for the area concerned and half the vertical minimum is applied. *See also composite route system*.

#### **compost**

The end product of composting; a mixture of garbage and degradable trash with soil in which certain bacteria in the soil break down the garbage and trash into organic fertilizer.

#### **composting**

(1) Sludge stabilization process relying on aerobic decomposition of organic matter in sludge by bacteria and fungi. (2) The natural biological decomposition of organic material in the presence of air to form a humus-like material. Controlled methods of composting include mechanical mixing and aerating, ventilating the materials by dropping them through a vertical series of aerated chambers, or placing the compost in piles out in the open air and mixing or turning it periodically. *See also compost*.

#### **compound**

(1) Chemical combination of two or more elements in a fixed and definite proportion by



weight. (2) A substance composed of atoms or ions of two or more elements in chemical combination. The constituents are bound by bonds or valence forces.

**compound fracture**

A broken bone in which at least one of the ends protrudes through the skin surface. Also referred to as *open fracture*.

**Comprehensive Environmental Response Compensation and Liability Act (CERCLA) of 1980**

Generally referred to as Superfund, CERCLA establishes a tax on certain chemical feedstocks used to fund the clean up of abandoned hazardous waste sites. Superfund was designated to provide immediate remedial action for highly contaminated areas. The federal government can then seek to recover these costs through negotiation or legal action against the contributor or sources of pollution.

**comprehensive insurance**

See *all-risk insurance*.

**comprehensive transportation**

See *intermodalism* (3).

**comprehensive zoning plan**

A general plan to control and direct the use and development of property in a municipality or in a large part thereof by dividing it into districts according to the present and potential use of the properties.

**compress**

Reduce the volume of a substance or material, or the duration of some event.

**compressed drive**

*Computing.* A drive has had its data compressed to take up less space. Special software must be running in the system to read from and write to a drive that is set up this way.

**compressed gas**

Any material or mixture having in the container an absolute pressure exceeding 40 psi at 70 degrees Fahrenheit or having an absolute pressure exceeding 104 psi at 13 degrees Fahrenheit or any liquid flammable material having a vapor pressure exceeding 40 psi absolute at 100 degrees Fahrenheit, according to the laws of chemical combination. Each compound has its own characteristic properties different from those of its constituent elements.

**Compressed Gas Association (CGA)**

A professional association of gas producers, suppliers, equipment manufacturers, and representatives from related industries that develops safety standards, makes recommendations to improve methods of handling, transporting, storing of compressed gases, and advising regulatory agencies concerned with the safe handling of compressed gases.

**compressed natural gas (CNG)**

Natural gas which is comprised primarily of methane, compressed to a pressure at or above 2,400 pounds per square inch (psi), and stored in special high-pressure containers. It is used as a fuel for natural gas-powered vehicles. See also *compressed gas*.

**compressed seat height**

The height of a cushioned chair seat pan from the floor or other reference surface when an individual is seated in it.

**compressed spectral array (CSA)**

A three-dimensional display or hard copy of a sequential series of spectra as a function of time, with time being the depth axis.

**compressed workweek**

A work schedule in which employees provide approximately 40 hours of work in less than five days.

**compressibility**

That property of a tissue or other soft material to be locally depressed or of a gas to be reduced in volume when external pressure is applied.

**compression**

Internal stress created in a material by forces acting inward, in opposite directions, in a manner which decreases the size of the material by closing or tightening its molecular structure.

**compression failure**

In wood, a deformation (buckling) of the fibers due to excessive compression along the grain.

**compression ratio**

The volume of the combustion chamber and cylinder when the piston is at the bottom of its stroke, divided by the volume of the combustion chamber when the piston is at the top of its stroke.

**compression settling**

Phenomenon referring to sedimentation of particles in a concentrated suspension where further settling can occur only by compression of the existing structure of settled particles.

**compression wood**

An aberrant (abnormal) and highly variable type of wood structure occurring in softwood species. The wood commonly has density somewhat higher than does normal wood, but somewhat lower stiffness and tensile strength for its weight in addition to high longitudinal shrinkage.

**compressor**

A mechanical device used to increase the pressure of a gas or vapor.

**Compton effect**

The glancing collision of a gamma-ray with an electron wherein the gamma-ray gives up part of its energy to the electron. Also referred to as *Compton scattering*.

**compulsory reporting points**

*Aviation.* Reporting points which must be reported to Air Traffic Control (ATC). They are designated on aeronautical charts by solid triangles or filed in a flight plan as fixes selected to define direct routes. These points are geographical locations which are defined by navigation aids/fixes. Pilots should discontinue position reporting over compulsory reporting points when informed by (ATC) that their aircraft is in "radar contact."

**computer-aided instruction (CAI)**

The use of computers and displays for presenting information to be learned. Also referred to as *computer-assisted instruction*.

**computer-aided manufacturing**

See *computer-integrated manufacturing*.

**computer anxiety**

A state of apprehension or fear when required to interact with a computer, which is out of proportion to any reasonable danger posed by the computer.

**computer anxiety scale**

A survey consisting of 10 test items dealing with feelings about computers, on which an individual judges a rank for each item according to a Likert scale. Synonymous with *Raub scale*.

**Computer Assessment of Reach (CAR)**

A crew station modeling program which attempts to determine what percentage of the air crew will be able to function in a given design.

**computer-assisted instruction**

See *computer-aided instruction*.

**computer-assisted tomography (CAT)**

See *computerized axial tomography*.

**Computer Biomechanical Man (COMBIMAN)**

A three-dimensional, interactive computer graphics modeling software package which can be used in the physical evaluation of pilots and other air crew members for crew station design, including sizing, reach, strength, and visual field.

**computer enhancement**

(1) The use of computer technology (hardware/software) to enhance or make better use of a particular task or process, such as computer-enhanced photography. (2) In weather forecasting, a process in which the temperatures of radiating surfaces are assigned different shades of gray on an infrared picture. This allows special features to be more clearly delineated.

**computer graphics**

The input, processing, or output of any pictorial or graphical data displayed on a computer monitor or hard copy.

**computer-human interface (CHI)**

See *human-computer interface*.

**computer input device**

Any type of hardware tool which can be used by an individual to get text, graphics, commands, or data into a computer.

**computer-integrated manufacturing (CIM)**

The use of computers in the actual manufacturing process.

**computer model**

Any numerical or graphical representation of objects, systems, or processes using a computer.

**computer vision**

The integration of one or more video cameras with appropriate software into a computer processing system for any purpose, such as electronic scene comparison, to simulate human vision for mobile robots, or other uses.

### **Computerized Accommodated Percentage Evaluation (CAPE)**

A modeling tool for determining what percentage of the air crew population could function satisfactorily in a given crew station design. (An old model, no longer used.)



*Patient undergoing a CAT Scan*

### **computerized axial tomography (CAT)**

The use of computers for control, acquisition, storage, processing, and display of a series of single planes of x-ray images along the longitudinal axis of the body or other x-ray transparent objects. Also referred to as *computer-assisted tomography*.

### **Computerized Relationship Layout Planning (CORELAP)**

A computer model for developing a plant layout based on relationships when large numbers of groups are involved.

### **Computerized Relative Allocation of Facilities Technique (CRAFT)**

A computer model for improving a plant layout, with the priority of minimizing transportation costs.

### **conative**

Pertaining to the basic strivings of a person, as expressed in his/her behavior and actions.

### **concave**

Rounded and somewhat depressed or hollowed out.

### **concave function**

A mathematical relationship or graph which has a negative second derivative during the interval of interest, resulting in an inverted U-shaped curve.

### **CONCAWE**

Conservation of Clean Air and Water in Europe.

### **concealed**

Rendered inaccessible by the structure or finish of a building. Wires in concealed raceways are considered concealed, even though they may become accessible by withdrawing them. *See also* [accessible \(2\)](#).

### **concentration**

(1) The amount of a substance dissolved or suspended in a unit volume of solution. (2) The process of increasing the amount of a substance per unit volume of solution. (3) Increase in strength by evaporation. (4) Medicine that has been strengthened by evaporation of its nonactive parts. (5) The relative content of a contained or dissolved substance in a solution.

### **concentration polarization**

A phenomenon in which solutes form a dense, polarized layer next to a membrane surface, which eventually restricts flow through the membrane.

### **concentration ratio**

The ratio of the concentration of solids in a water system to those of the dilute makeup water added to the system.

### **concentric action**

A dynamic muscle action which involves active muscle shortening against a resistance. Also referred to as *concentric contraction* and *concentric muscle contraction*.

### **concentric contraction**

*See* [concentric action](#).

### **concentric muscle contraction**

*See* [concentric action](#).

### **concept**

An abstract idea or notion which enables an individual to generalize from known specific examples not previously encountered.

### **concept hierarchy**

An organization in which the most general aspects of a concept are located at the top, with subsidiary aspects branching beneath.

### **concept hierarchy analysis**

The examination of a concept hierarchy to determine if a better arrangement can be made or to compare with related structures.

### **concept phase**

That portion of a system's, product's, or other yet to be developed program's life cycle dur-

ing which ideas are first conceptualized; precedes the design phase.

**concept trainer**

A training aid used when the principles to be learned are too complex to be easily understood from verbal descriptions or when simulation with actual physical objects appears to be the optimum method.

**concordance coefficient**

See *Kendall's coefficient of concordance*.

**concrete**

A mixture of water, sand, stone, and a binder that hardens to a stone-like mass.

**concurrent causes**

Causes acting contemporaneously and together causing injury, which would not have resulted in the absence of either. Two distinct causes operating at the same time to produce a given result, which might produced by either, are considered concurrent causes. However, two distinct causes, successive and unrelated in an operation, cannot be concurring, and one will be regarded as the proximate and efficient and responsible cause, and the other will be regarded as the remote cause. See also *cause, proximate cause, and efficient cause*.

**concurrent insurance**

Insurance coverage under two or more similar policies of varying dates and amounts. See also *insurance*.

**concurrent loading**

A test or working condition in which an individual is required to perform both a fatiguing exercise and a criterion task simultaneously.

**concurrent negligence**

Consists of the negligence of two or more persons concurring, not necessarily in point of time, but not in point of consequence, in producing a single indivisible injury.

**concurrent validity**

Having a high correlation between job incumbent test scores and performance on the job.

**concussion**

A violent jar or shock, or the condition that results from such an injury. A clinical condition caused by a sudden, strong, mechanical force applied to the head and characterized by temporary impairment of neural function such

as an alteration in consciousness or disturbances of vision, equilibrium, and/or reflexes.

**condensate**

Water obtained by evaporation and subsequent condensation.

**condensate polishing**

Treatment of condensate water to achieve required purity.

**condensation**

(1) The change in state from vapor to liquid; opposite that of evaporation. (2) The act of rendering, or the process of becoming, more compact. (3) Pathologic hardening of a part. (4) The unconscious union of concepts to produce a new idea or mental picture.

**condensation nuclei**

Small particles on which water vapor condenses. In the development of precipitation, if enough vapors are present in the atmosphere, the nuclei eventually become large enough and heavy enough to fall to the earth as precipitation (rain, snow, hail, etc.) or remain suspended (fog, clouds, etc.). Small nuclei less than 0.2 m radius are called *aitken nuclei*. Those with radii between 0.2 and 1 m are *large nuclei*, while *giant nuclei* have radii larger than 1 m.

**condensation trail**

See *contrail*.

**condenser**

(1) A vessel or apparatus for condensing gases or vapors. (2) A device for illuminating microscopic objects. (3) An apparatus for concentrating energy or matter.

**condiment**

Any flavoring added to food to improve taste or increase stimulation of the taste buds (such as spice, salt, etc.), or an item having such effect (such as gum or mint).

**conditional cues**

Any displayed information which provides the user with a brief indicator of the current operating rules or conditions.

**conditional event**

As pertains to fault tree analysis (FTA) and/or the Management Oversight and Risk Tree (MORT), an occurrence that, based upon its own unique characteristics, imposes condi-

tions or exclusions on the occurrence of other events in the fault path. Represented graphically as an oval. *See also* **exclusive event**.

**conditional reflex**

A learned response to a stimulus which did not originally cause that response.

**conditional registration**

Under special circumstances, the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) permits registration of pesticide products that is "conditional" upon submission of additional data. These special circumstances include a finding by the EPA Administrator that a new product or use of an existing pesticide will not significantly increase the risk of unreasonable adverse effects. A product containing a new (previously unregistered) active ingredient may be conditionally registered only if the Administrator finds that such conditional registration is in the public interest, that a reasonable time for conducting the additional studies has not elapsed, and the use of the pesticide for the period of conditional registration will not present an unreasonable risk.

**conditionally exempt**

An exemption applied to those *small quantity generators* that generate less than 100 kilograms of hazardous waste during any month.

**conditionally unstable air**

An atmospheric condition that exists when the environmental lapse rate is less than the dry adiabatic rate but greater than the moist adiabatic rate. Also called *conditional instability*.

**conditioned air**

Air that has been heated, cooled, humidified, or dehumidified to maintain an interior space within the comfort zone. Sometimes referred to as *tempered air*. *See also* **comfort zone**.

**conditioned reflex**

A reflex that does not occur naturally in the animal but that may be developed by regular association of some physiologic function with an unrelated outside event, such as ringing a bell or flashing of a light.

**conditioning**

(1) *Environmental*. Pretreatment of a wastewater or sludge, usually by means of chemicals, to facilitate removal of water in a subsequent thickening or dehydration process. (2)

*Physiology*. Any physical (or mental) activity or training which prepares an individual for a given task.

**conductance**

The ability to conduct or transmit, as electricity or other energy or materials. A measure of a solution's electrical conductivity that is equal to the reciprocal of the resistance.

**conduction**

(1) The transfer of heat by direct contact from one body to another. (2) The transfer of heat by molecular activity from one substance to another, or through a substance. This transfer is always from warmer to colder regions.

**conduction deafness**

*See* **conductive hearing loss**.

**conductive hearing loss**

(1) A type of hearing loss that is not caused by noise, but is due to any disorder that prevents sound from reaching the inner ear. It is a hearing loss that is due to poor transmission of sound from the outer ear to the cochlea. (2) A physical defect or condition of the outer or middle ear that interferes with the passage of sound. This can be the end result of physical obstruction within the outer or middle ear, a birth defect, the aging process, or disease, all of which can affect conversion of sound energy into mechanical energy. This type of hearing loss involves a reduction in the perception of loudness and not in clarity.

**conductive heat loss**

That amount of heat eliminated from the body via heat conduction, indicated by an equation of the form:

$$H = kA \frac{\Delta T}{\Delta x}$$

where:

- $H$  = heat loss
- $k$  = thermal conductivity coefficient
- $A$  = body surface area in contact with another object
- $\Delta T/\Delta x$  = temperature gradient

**conductivity**

The ability of a substance to conduct electricity; directly related to the mineral content of water.



**conductivity detector**

A detection method based on the absorption of a gas by an aqueous solution with the formation of electrolytes, thereby producing a change in the electrical conductivity of the solution, which can be measured by this type detector and equated to gas concentration.

**conductor**

(1) *Bare Conductor*. A conductor having no covering or electrical insulation whatsoever. (2) *Covered Conductor*. A conductor encased within material of a composition and thickness that is not recognized as electrical insulation. (3) *Insulated Conductor*. A conductor encased within material of a composition and thickness that is recognized as electrical insulation.

**conduit body**

A separate portion of a conduit or tubing system that provides access through a removable cover(s) to the interior of the system at a junction of two or more sections of the system or at a terminal point of the system. Boxes such as FS and FD or larger cast or sheet metal boxes are not classified as conduit bodies.

**condyle**

A rounded projection on a bone surface, often associated with a joint.

**cone**

A solid figure or body having a circular base and tapering to a point, especially one of the structures of the retina, which, with the rods, form the light-sensitive elements of the retina. The cones make possible the perception of color. *See also* [color blindness](#).

**cone monochromatism**

A condition in which an individual has only a single type of retinal cone, thus seeing only one color, while having normal color brightness discrimination.

**conference**

(1) *General*. A discussion or consultation on some important matter; also, a formal meeting for this. A league or association, as of athletic teams, schools, churches, specific professionals, etc. (2) *Maritime*. An association of ship owners operating in the same trade route who operate under collective conditions and agree on tariff rates.

**confidence**

A measure of a material's ability to conduct electrons.

**confidence interval**

A range, or interval, that has a specified probability of including the true value of a parameter of a distribution.

**confidence limits**

Confidence limits are mathematically determined intervals, defined as upper and lower limits, for which one is confident (e.g., 90%, 95%, etc.) that the true value is greater than, less than, or between.

**config.sys**

*Computing*. A text file that contains a list of commands that MS-DOS executes every time a computer is started (booted) or restarted (rebooted). The config.sys file contains MS-DOS settings and drives that run operations such as those pertaining to a network and/or devices such as a CD-ROM drive.

**configuration control**

A design or procedure for the controlled development, operation, and maintenance of a system or process.

**confined aquifer**

An aquifer in which groundwater is confined under pressure that is significantly greater than atmospheric pressure.





*A worker prepares to enter a permit-required confined space*

### **confined space**

Any space not designed or intended for continuous occupancy that has a limited or restricted means of entry or exit, and that is subject to the accumulation of toxic or flammable contaminants or has an oxygen-deficient atmosphere. Confined spaces must be large enough for an employee to enter and perform assigned work. Where confined spaces are categorized, there are two levels of classification: permit-required confined space and low-hazard permit space.

### **confined space entry**

The entry of personnel (one or more) into a confined space. *See also [confined space](#) and [confined space, permit required](#).*

### **confined space, permit required**

According to OSHA, a confined space that contains or has the potential to contain a hazardous atmosphere, a material with the potential to engulf an entrant, is configured such that an entrant could be trapped or asphyxiated, or contains any other recognized health or safety hazard.

### **conflagration**

A fire extending over a considerable area and engulfing a considerable amount of property.

### **conflict**

A state resulting from an individual having incompatible desires or two or more individuals or groups having different goals or means to achieve a goal.

### **conflict alert**

*Aviation.* A function of certain air traffic control automated systems designed to alert radar controllers to existing or pending situations between tracked targets that require immediate attention/action. *See also [mode C intruder alert](#).*

### **conflict of interest**

Term used in connection with public officials and fiduciaries and their relationship to matters of private interest or gain to them.

### **conflict resolution**

*Aviation.* The resolution of potential conflicts between aircraft that are radar identified and in communication with Air Traffic Control (ATC) by ensuring that radar targets do not touch. Pertinent traffic advisories shall be issued when this procedure is applied. Note: This procedure shall not be provided utilizing mosaic radar systems.

### **conflicting evidence**

Evidence offered by the plaintiff and defendant, or prosecutor and defendant which is inconsistent and cannot be reconciled.

### **conflicting movement**

*Aviation.* Movements over conflicting routes. *See also [conflicting routes](#).*

### **conflicting routes**

*Aviation.* Two or more routes, opposing, converging or intersecting, over which movements cannot be made simultaneously without possibility of collision.

### **confluence**

The point where the flows of streams or rivers meet.

### **confounding variable**

A variable which is uncontrolled and which has, or is likely to have, some effect in an experiment.

### **congeal**

To thicken, jell, or solidify, usually by cooling or freezing.

**congenital**

Refers to certain mental or physical traits, abnormalities, malformations, or diseases that may be either inherited or due to an influence that occurred between conception and birth.

**congenital abnormality**

Any defect in the structure or function of an individual existing before or at birth. More commonly referred to as *congenital defect*.

**congenital defect**

See *congenital abnormality*.

**congestive hypoxia**

A form of hypokinetic hypoxia in which venous blood flow is reduced.

**Congress**

Formal meeting of delegates or representatives. The Congress of the United States was created by Article I, Section 1, of the Constitution, adopted by the Constitutional Convention on September 17, 1787, providing that "All legislative Powers herein granted shall be vested in a Congress of the United States, which shall consist of a Senate and House of Representatives." The first Congress under the Constitution met on March 4, 1789, in the Federal Hall in New York City. The membership then consisted of 20 Senators and 59 Representatives.

**Congressional committee**

A committee of the House of Representatives or of the Senate or a joint committee formed for some particular purpose.

**Congressional district**

A geographical unit of a state from which one member of the House of Representatives is elected.

**Congressional immunity**

See *legislative immunity*.

**Congressional powers**

The authority vested in the Senate and House of Representatives to enact laws, etc. as provided in the U.S. Constitution.

**conjugate**

*Seismology*. Describes a pair of intersecting (or nearly intersection) faults, the slip motions of which are opposite (e.g., right-lateral and left-lateral), so as to accommodate the rotation of the block they bound. Conjugate faults will sometimes slip roughly simultaneously (within hours of each other), causing pairs of earthquakes.

**conjunctiva**

The delicate membrane lining the eyelids and covering the eyeball.

**conjunctivitis**

Inflammation of the conjunctiva, the thin membrane that covers the eyeball and lines the eyelid. This disorder may be caused by bacteria or a virus, or by allergic, chemical, or physical factors. Its infectious form (of bacterial or viral origin) is highly contagious. The type of conjunctivitis known as *pinkeye* is an example of a highly contagious conjunctivitis and must be handled with extreme care to prevent its spread.

**connate water**

Water trapped in sedimentary rocks during their formation. Also known as *fossil water*.

**connected word recognition**

A capability in which a phrase or a sequence of a few meaningfully connected words may be understood by an artificial system.

**connecting carrier**

One of several common carriers whose united lines or parts constitute the route over which a shipment is to pass, and which participates in transportation of such shipment as a common carrier furnishing a necessary link in transportation. See also *common carrier*.

**connective tissue**

A fibrous type of body tissue with varied functions. The connective tissue system supports and connects internal organs, forms bones and walls of blood vessels, attaches muscles to bones, and replaces tissues of other types following injury. Connective tissue consists mainly of long fibers embedded in non-cellular matter, the ground substance. The density of these fibers and the presence or absence of certain chemicals make some connective tissues soft and rubbery and others hard and rigid. Compared to most other kinds of tissue, connective tissue has few cells. The fibers contain a protein called collagen, and the tissue for that reason is often called collagen tissue. Collagen tissue can develop in any part of the body, and the body uses the ability to help repair or replace damaged areas. Scar tissue is the most common form of this substitute.

**connector**

*Computing.* An electrical connection that allows the computer to send and receive data to and from other devices and/or computers. Standard connectors on a computer include the serial and parallel connectors, which allow users to send information from their computer to a printer, for example.

**consciousness**

An awareness of one's external environment.

**consensual standard**

See *consensus standard*.

**consensus standard**

A standard of approach developed through a consensus process of agreement among representatives of interested or affected industries, organizations, or individual members of a nationally recognized standards producing organization. A standard of conduct that has been developed by a nationally recognized organization having understood expertise in a given field (such as the American National Standards Institute and the National Fire Protection Association). Such standards carry no force of law unless adopted and implemented by a regulatory agency, such as OSHA. Also referred to as *consensual standard*.

**consent decree**

(1) *General.* Under the Federal Sentencing Guidelines (FSGs), an agreement between a party charged with a regulatory violation and a regulatory agency whereby the party charged agrees to accept a penalty specified by the agency without admitting a violation. Consent decrees under the FSGs may impose a comprehensive compliance program or enhancements to the organization's existing program. (2) *EPA-Specific.* A legal document, approved by a judge, that formalizes an agreement reached between the EPA and potentially responsible parties (PRPs) through which the PRPs will conduct all or part of a cleanup action at a Superfund site; cease or correct actions or processes that are polluting the environment; or otherwise comply with regulations where the PRP's failure to comply caused the EPA to initiate regulatory enforcement actions. The consent decree describes the actions PRPs will take and may be subject to a public comment period. See also *potentially responsible party*.

**consequation**

Any aspect of the environment which changes the behavior of an individual encountering it.

**consequential damages**

Such damage, loss, or injury as does not flow directly and immediately from the act of the party, but only from some of the consequences or results of such act. Damages which arise from intervention of special circumstances not ordinarily predictable. Those losses or injuries which are a result of an act but are not direct and immediate.

**conservation**

(1) The act of conserving, or the actions taken in the interests of conserving, environmental resources and/or ecosystems, wildlife, or any other interests of focus or concern. The protection, improvement, and use of natural resources according to principles that will assure their highest economic or social benefits. (2) Avoiding waste of, and renewing when possible, human and natural resources. See also *conserve*.

**conservation group**

Any concerted gathering of two or more persons dedicated in principle and practice to the protection and preservation of certain resources or attributes normally associated with the natural environment, including wildlife, or other such areas of common interest.

**conservation management**

Under the Federal Marine Mammal Protection Act of 1972, the collection and application of biological information for the purpose of increasing and maintaining the number of animals within species and populations of marine mammals at their optimum sustainable population. Such terms include the entire scope of activities that constitute a modern scientific resource program, including, but not limited to research, census, law enforcement, and habitat acquisition and improvement. Also included within these terms, when and where appropriate, is the periodic or total protection of species or populations as well as the regulated taking of such.

**conservation of angular momentum**

The principle that the angular momentum of an object will remain unchanged unless the object is acted upon by a net force.

**conservation of linear momentum**

The principle that the linear momentum of an object will remain unchanged unless the object is acted on by a net force.

**conservation of momentum**

See *conservation of angular momentum* and *conservation of linear momentum*.

**conserve**

Under the Federal Endangered Species Act of 1973, to use, and the use of, all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to the Act are no longer necessary. Such methods and procedures include, but are not limited to, all activities associated with scientific resources management such as research, census, law enforcement, habitat acquisition and maintenance, propagation, live trapping, and transplantation, and in the extraordinary case where population pressures within a given ecosystem cannot be otherwise relieved, may include regulated taking.

**consideration**

The inducement to a contract. The cause, motive, price, or impelling influence which induces a contracting party to enter into a contract. The reason or material cause of a contract. Some right, interest, profit or benefit accruing to one party, or some forbearance, detriment, loss, or responsibility, given, suffered, or undertaken by another. It is a basic, necessary element for the existence of a valid contract that is legally binding on the parties.

**consignee**

A person or company to whom commodities are shipped. Officially, the legal owner of the cargo.

**consignee mark**

A symbol placed on packages for export identification purposes; generally consisting of a triangle, square, circle, diamond, or cross, with letters and/or numbers as well as port of discharge.

**consignment**

The physical transfer of goods from a seller (the consignor), who retains title, to the consignee, who acts as selling agent by selling the goods for commission, remitting the net proceeds to the consignor.

**consignor**

A person or company shown on the bill of lading as the shipper.

**consist**

*Railroad.* On-track railroad equipment such as a train, locomotive, group of railcars, or a single railcar not coupled to another car or to a locomotive.

**consist responsibility**

The railroad employing the crew members operating the consist at the time of the accident determines the consist owner for reporting purposes only.

**consistency**

A level of performance which repeatedly falls within certain specified limits.

**consolan**

*Aviation.* A low frequency, long-distance navigational aid (NAVAID) used principally for transoceanic navigation.

**consolidated metropolitan statistical area (CMSA)**

A metropolitan complex of 1 million or more population, containing two or more component parts designated as primary metropolitan statistical areas (PMSAs).

**consolidated vehicle**

A vehicle transferred, with or without reimbursement, to General Services Administration (GSA) by another government agency for participating in the Introductory Fleet Management System (IFMS).

**constant**

- (1) Persistent and continuous; unrelenting.
- (2) A fixed numerical value, or a symbol representing such a value.

**constant air volume system**

An air handling system that provides a constant air flow while varying the temperature to meet heating and cooling needs.

**constant dollars**

- (1) A dollar value adjusted for changes in the average price level. A constant dollar is derived by dividing a current dollar amount

by a price index. The resulting constant dollar value is that which would exist if prices had remained at the same average level as in the base period. (2) A series of figures is expressed in constant dollars when the effect of change in the purchasing power of the dollar has been removed. Usually the data are expressed in terms of dollars of a selected year or the average of a set of years.

**constant element**

A job or task in which a worker exhibits consistency of performance time, even if minor changes in processing or product dimensions are made.

**constant error**

The difference between the point of subjective equality and the known standard value in psychophysical testing.

**constant-height chart**

In meteorology, a chart (also referred to as a *constant-level chart*) showing variables, such as pressure, temperature, and wind, at a specific altitude above sea level. Variation in horizontal pressure is depicted by isobars. The most common constant-height chart is the surface chart, which is also called the *sea level chart*.

**constant pressure chart**

In meteorology, a chart (also referred to as an *isobaric chart*) showing variables such as temperature and wind, on a constant pressure surface. Variations in height are usually shown by lines of equal height (see *contour lines*).

**constant-rate filtration**

Filter operation where flow through the filter is maintained at a constant rate by an adjustable effluent control valve.

**constipation**

A condition in which the waste matter in the bowels is too hard to pass easily, or in which bowel movements are so infrequent that discomfort or uncomfortable symptoms result.

**Constitutional Record**

Proceedings of Congress are published in the *Congressional Record*, which is issued daily when Congress is in session. Publication of the *Record* began March 4, 1873; it was the first series officially reported, printed, and published directly by the Federal Govern-

ment. The Daily Digest of the *Congressional Record*, printed in the back of each issue of the *Record*, summarizes the proceedings of that day in each House and before each of their committees and subcommittees, respectively. The Digest also presents the legislative program for each day, and at the end of the week, gives the program for the following week. Its publication began on March 17, 1947. Members of Congress are allowed to edit their speeches before printing and may insert material never actually spoken by securing from their respective houses permission to print or to extend their remarks.

**constraint**

A restriction affecting the degree of freedom to act or move; a boundary or condition which may dictate performance in other than the desired or intended manner.

**constrictor**

A muscle which contracts to close or reduce the cross-section of an opening.

**construct**

(1) To build or erect. (2) A postulated attribute of an individual assumed to be reflected in observable behaviors.

**construct validity**

The extent of the relationship between what a test measures and how test scores are reflected in behavior or performance.

**constructed solid geometry (CSG)**

A technique in solid modeling where primitive solids are generated and combined to produce more complex forms.

**constructed wetlands**

A wastewater treatment system using the aquatic root system of cattails, reeds, and similar plants to treat wastewater applied either above or below the soil level.

**construction and demolition waste**

Waste consisting of building materials, packaging, and rubble resulting from construction, remodeling, repair, and demolition operations on pavements, houses, commercial buildings, and other structures.

**construction/maintenance zone**

An area, usually marked by signs, barricades, or other devices indicating that highway construction or highway maintenance activities are ongoing.



**construction pipeline**

*Nuclear.* The various stages involved in the acquisition of a nuclear reactor by a utility. The events that define these stages are the ordering of a reactor, the licensing process, and the physical construction of the nuclear generating unit. A reactor is said to be "in the pipeline" when the reactor is ordered and "out of the pipeline" when it completes low-power testing and begins operation toward full power.

**consular invoice**

An invoice covering a shipment of export goods certified by a consular official of the country of destination. The invoice shows the value of the shipment in the currency of the country of export. It is used by customs officials of the country of entry to verify the value, quantity, and nature of the shipment.

**consultant**

An individual or group who is uniquely qualified or has claimed expertise in a particular field and may be called upon to perform some specialized technical function on a one-time or an occasional basis.

**consumer**

One who purchases goods or services for final use, not having the intent to reprocess or repackage for resale.

**consumer commodity**

A material that is packaged and distributed in a form intended or suitable for sale through retail sales agencies or instrumentalities for consumption by individuals for purposes of personal care or household use. This term also includes drugs and medicines.

**consumer complaint**

Oral or written communication from a consumer indicating a possible problem with a product.

**Consumer Price Index (CPI)**

An index issued by the U.S. Department of Labor, Bureau of Labor Statistics. The CPI is designed to measure changes in the prices of goods and services bought by wage earners and clerical workers in urban areas. It represents the cost of a typical consumption bundle at current prices as a ratio to its cost at a base year.

**consumer product**

A product intended for final use primarily by the general public, as opposed to industrial use.

**Consumer Product Safety Act**

Established the Consumer Product Safety Commission. Definition of consumer product does not include boats which are covered under the statutes.

**Consumer Product Safety Commission**

An independent federal regulatory agency established by act of 27 October 1972 (86 Stat. 1207) to administer and implement the Consumer Product Safety Act. The Commission has primary responsibility for establishing mandatory product safety standards, where appropriate, to reduce the unreasonable risk of injury to consumers from consumer products. In addition, it has authority to ban hazardous consumer products. The Consumer Product Safety Act also authorizes the Commission to conduct extensive research on consumer and industry information and education programs, and establish a comprehensive Injury Information Clearinghouse.

**consumption**

(1) *General.* The act or process of consuming; waste, decay, destruction. Using up of anything, as food, natural resources, heat, or time. (2) *Environmental.* With respect to any substance, the amount of that substance produced in the United States, plus the amount imported, minus the amount exported to Parties to the Montreal Protocol. Such term shall be construed in a manner consistent with the Montreal Protocol. (3) *Medical.* A wasting away of the body, applied especially to pulmonary tuberculosis.

**consumption unit value**

Total price per specified unit, including all taxes, at the point of consumption.

**consumptive waste**

Water that returns to the atmosphere without beneficial use.

**contact**

(1) To establish communication with (followed by the name of the facility and, if appropriate, the frequency to be used). (2) A flight condition wherein the pilot ascertains the attitude of his/her aircraft and navigates by visual reference to the surface.



**contact approach**

*Aviation.* An approach wherein an aircraft on an Instrument Flight Rules (IFR) flight plan, having an air traffic control authorization, operating clear of clouds with at least 1 mile flight visibility and a reasonable expectation of continuing to the destination airport in those conditions, may deviate from the instrument approach procedure and proceed to the destination airport by visual reference to the surface. This approach will only be authorized when requested by the pilot and the reported ground visibility at the destination airport is at least 1 statute mile.

**contact condenser**

A device in which steam is condensed through direct contact with a cooling liquid.

**contact dermatitis**

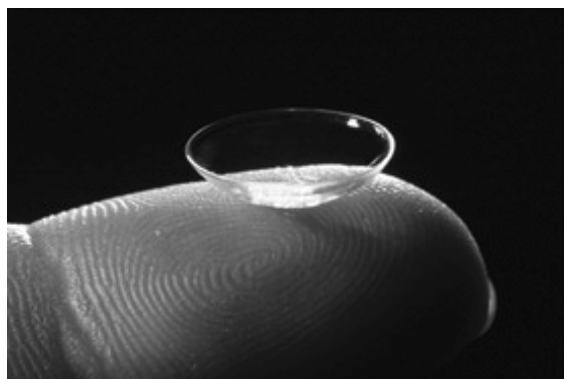
Inflammation of dermal tissue that is caused by contact with a primary irritant. A delayed type of induced sensitivity of the skin resulting from cutaneous contact with a specific allergen.

**contact irritants**

Chemicals that produce visible signs of skin and eye irritation upon contact. Rubber, plastics, resins, glues, cement, oil, and organic solvents are examples of contact irritants.

**contact lens**

A thin, curved shell of glass or plastic that is applied directly to the cornea to correct refractive errors. They do not actually touch the surface of the eye, but float on a thin layer of the fluid that naturally moistens the eyeball. *See also lens.*



*A "soft" contact lens*

**contact pesticide**

A chemical that kills pests when it touches them, rather than by being eaten (stomach poison). Also, soil that contains the minute skeletons of certain algae that scratch and dehydrate waxy-coated insects.

**contact process**

Wastewater treatment process where diffused air is bubbled over fixed media surfaces.

**contact rate**

Amount of medium (e.g., groundwater, soil) contacted per unit time or event (e.g., liters of water ingested per day).

**contact stabilization process**

Modification of the activated sludge process where raw wastewater is aerated with activated sludge for a short time prior to solids removal and continued aeration in a stabilization tank. Also called *biosorption process*.

**contagion**

Literally the transmission of infection by direct contact.

**contained-in principal**

Under RCRA, the EPA view that soil, groundwater, surface water, and debris that are contaminated with a listed hazardous waste must be regulated.

**container**

(1) *General.* Something that contains, such as a box, can, drum, etc. (2) *Shipping.* A large standard size metal box into which cargo is packed for shipment aboard specially configured oceangoing containerships and designed to be moved with common handling equipment enabling high-speed intermodal transfers in economically large units between ships, railcars, truck chassis, and barges using a minimum of labor. The container, therefore, serves as the transfer unit rather than the cargo contained therein. (3) *Hazardous Materials Management.* A component other than piping that contains a hazardous fluid.

**container cargo**

The tonnes of containerized cargo assessed at the *container rate* of tools as defined in the St. Lawrence Seaway Tariff of Tolls.

**container chassis**

*Transportation.* A semitrailer of skeleton construction limited to a bottom frame, one or more axles, specially built and fitted with

locking devices for the transport of cargo containers, so that when the chassis and container are assembled, the units serve the same function as an over-the-road trailer.

**container load**

A load sufficient in size to fill a container either by cubic measurement or by weight.

**container on flatcar (COFC)**

This is accomplished with containers resting on railway flatcars.

**container terminal**

An area designated for the stowage of cargoes in container; usually accessible by truck, railroad, and marine transportation. Here containers are picked up, dropped off, maintained, and housed.

**containerization**

Stowage of general or special cargoes in a container for transport in the various modes.

**containerize**

To place a material into a container.

**containerized cargo**

(1) Cargo shipped or stored in containers. (2) Cargo which is practical to transport in a container, and results in a more economical shipment than could be affected by shipping the cargo in some other form of unitization.

**containership**

A cargo vessel designed and constructed to transport, within specifically designed cells, portable tanks and freight containers which are lifted on and off with their contents intact. There are two types of containerships: *full* and *partial*. Full containerships are equipped with permanent container cells with little or no space for other types of cargo. Partial containerships are considered multi-purpose container vessels, where one or more but not all compartments are fitted with permanent container cells, and the remaining compartments are used for other types of cargo. This category also includes container/car carriers, container/rail car carriers, and container/roll-on/roll-off vessels.

**containment**

(1) A process, structure, or system within a specified area or volume for preventing an entity from spreading and/or interacting with other materials or another environment. (2) Control of the expansion or propagation of

accidental loss. Commonly used in fire control and hazardous chemical spills.

**containment level**

That degree of independence or separation in containment provided by a specified system.

**containment system**

The system, including the structure, ventilation method, entry and/or egress routes, contaminant collection equipment, etc., that will be utilized to prevent the spread of contamination from a work site into the surroundings.

**contaminant**

Any foreign material not normally found in a substance. Also, any physical, chemical, biological, or radiological substance or matter that has a diverse effect on air, soil, or water.

**contaminate**

The placement of one or more contaminants in a location where they may degrade the environment.

**contaminated sharps**

Any contaminated objects that can penetrate the skin including, but not limited to, needles, scalpels, broken glass, broken capillary tubes, and exposed ends of dental wire. In this context, the "contaminant" is normally considered to be blood, blood byproducts, or other infectious materials.

**contamination**

The degradation of natural water, air, or soil quality resulting from human activity.

**contempt**

(1) A willful or intentional disregard or disobedience of a public authority. (2) The stage in civil litigation where it is alleged that a party has violated an injunction, with the consequences that the court can order an appropriate remedy to cure the contempt. Also, in any court proceeding, civil or criminal, where a person before the court engages in disrespectful or disruptive behavior.

**contempt of Congress**

Deliberate interference with the duties and the powers of Congress. Both houses of Congress may cite an individual for such contempt.

**contempt of court**

Any act which is calculated to embarrass, hinder, or obstruct the court in the administration of justice, or which is calculated to lessen its authority or its dignity. Committed by a person who does any act in willful contravention of the authority or dignity of the court, or tending to impede or frustrate the administration of justice, or by one who, being under the court's authority as a party to a proceeding therein, willfully disobeys its lawful orders or fails to comply with an undertaking which he/she has given.

**content validity**

The extent to which a test samples a domain of important job behaviors.

**conterminous U.S.**

The 48 adjoining States and the District of Columbia.

**contiguous zone**

The entire zone established or to be established by the United States under the Convention of the Territorial Sea and the Contiguous Zone.

**continent**

One of the large, unbroken masses of land into which the Earth's surface is divided.

**continental drift**

See *plate tectonics*.

**contingency**

A possible situation or event, usually referring to an undesirable or abnormal situation or occurrence.

**contingency allowance**

A small time allowance included within the standard time to cover for legitimate, expected additional work and delays. Usually not measured precisely because of its infrequent occurrence.

**contingency analysis**

An analysis performed to identify what abnormal situations, errors, or malfunctions a system may develop or encounter to improve system performance or establish what special human responses may be required under those circumstances.

**contingency plan**

(1) A written plan describing in detail the actions that will be taken in the event certain

defined events should occur during the normal course of business operations. It usually refers to unwanted events or occurrences, such as disasters (floods, hurricanes, earthquakes, etc.) or other emergency situations (bomb threats, hazardous materials spill, fire, etc.) and generally includes the assignment of specific responsibilities to persons within the organization and may also include information on recovery or post-event activities that will be taken to return to normal operation once the situation has been corrected. (2) A document setting out an organized, planned, and coordinated course of action to be followed in case of a fire, explosion, or other accident that releases toxic chemicals, hazardous wastes, or radioactive materials which threaten human health or the environment.

**contingent valuation survey (CVM)**

A survey technique for assigning value to injured natural resources based on respondents' willingness to support various resources in monetary terms.

**continual improvement**

Under ISO 14000, the process of enhancing the environmental management system to achieve improvements in overall environmental performance in line with the organization's environmental policy.

**continuance**

The adjournment or postponement of a session, hearing, trial, or other proceeding to a subsequent day or time; usually on the request or motion of one of the parties.

**continuing damages**

Those that accrue from the same injury, or from the repetition of similar acts, between two specified periods of time.

**continuous air monitor (CAM)**

An instrument which is typically located in a potentially contaminated location to detect a specific contaminant, such as flammable or toxic gas or vapor, and which will alarm if a preset concentration is exceeded. It can be a passive type sampler or an active type sample.

**continuous discharge capacity**

Measured as percent of rated energy capacity. Energy delivered in a constant power dis-

charge required by an electric vehicle for hill climbing and/or high-speed cruise, specified as the percent of its rated energy capacity delivered in a one-hour constant-power discharge.

**continuous emissions monitoring**

The continuous measurement of pollutants emitted into the atmosphere from combustion or industrial processes.

**continuous emission monitoring system (CEMS)**

The equipment as required by the Clean Air Act (CAA), used to sample, analyze, measure, and provide on a continuous basis a permanent record of emissions and flow (expressed in pounds per million British thermal units (lbs./m Btu), pounds per hour (lbs./hr) or such other form as the EPA Administrator may prescribe by regulations under the CAA.

**continuous exposure**

Exposure to a health hazard throughout the workday.

**continuous forms**

Having each individual form or sheet attached to the next, usually with guides for a printer, and which necessitates separation after printing.

**continuous function**

Any mathematical function which has no breaks or gaps in its extent.

**continuous monitoring**

Usually refers to air sampling or radiation monitoring conducted at locations where leaks may occur, or where hazardous materials are handled in high quantities.

**continuous noise**

(1) That noise which is persistent over long periods of time. (2) According to OSHA, variations in noise level involving maxima at intervals of 1 second or less.

**continuous passive motion machine**

A device which repeatedly cycles automatically to passively flex and extend one or more joints through their ranges of motion.

**continuous reading method**

See *cumulative timing*.

**continuous spectrum**

(1) *General*. A range of frequencies within which all frequencies are present. (2) *Acoustics*. A spectrum which is continuous in the frequency domain.

**continuous speech recognition**

See *speech recognition*.

**continuous timing**

See *cumulative timing*.

**continuous timing method**

See *cumulative timing*.

**continuous variable**

A variable which may take any value within a specified range of values.

**continuous wave (CW)**

A laser system which provides a constant, steady-state delivery of laser power.

**continuous work**

A sustained workload without any rest period.

**contour line**

A line that connects points of equal elevation above a reference level, most often sea level.

**contour plowing**

Farming methods that break ground following the shape of the land in a way that discourages erosion.

**contract**

An enforceable agreement, written or oral, between two or more persons which creates an obligation to do or not to do a particular thing.

**contract carrier**

(1) A carrier which furnishes transportation service to meet the special needs of shippers who cannot be adequately served by common carriers. A transportation company that carries, for pay, the goods of certain customers only as contrasted to a common carrier that carries the goods of the public in general. See also *carrier* and *common carrier*. (2) For-hire interstate operators [which] offer transportation services to certain shippers under contracts.

**contract demand**

*Refining*. The level of service in terms of the maximum daily and/or annual volumes of natural gas sold and/or moved by the pipeline company to the customer holding the contract.

Failure of a pipeline company to provide service at the level of the contract demand specified in the contract can result in a liability for the pipeline company.

**contract laboratory program (CLP)**

Analytical program developed for Superfund waste site samples to fill the need for legally defensible analytical results supported by a high level of quality assurance and documentation.

**contract labs**

Laboratories under contract to EPA, which analyze samples taken from wastes, soil, air, and water, or carry out research.

**contract operations**

Private operation of municipal facilities, such as water and wastewater treatment plants.

**contract-required detection limit (CRDL)**

A term that is equivalent to contract-required quantitation limit, but used primarily for inorganic substances. *See also* [contract-required quantitation limit](#).

**contract-required quantitation limit (CRQL)**

Substance-specific level that a contract laboratory program (CLP) laboratory must be able to routinely and reliably detect in specific sample matrices. It is not the lowest detectable level achievable, but rather the level that a CLP laboratory should reasonably quantify. The CRQL may or may not be equal to the quantitation limit of a given substance in a given sample. For hazardous Ranking System purposes, the term CRQL refers to both the contract-required quantitation limit and the contract-required detection limit. *See also* [contract laboratory program](#) and *hazardous ranking system*.

**contracted gas**

Any gas for which Interstate Pipeline has a contract to purchase from any domestic or foreign source that cannot be identified to a specific field or group. This includes tailgate plant purchases, single meter point purchases, pipeline purchases, natural gas imports, SNG purchases, and LNG purchases.

**contraction**

A shortening or reduction in some dimension of a structure.

**contractor**

One who contracts to do work for another. This term is strictly applicable to any person who enters into a contract, but is commonly reserved to designate one who, for a fixed price, undertakes to procure the performance of works or services on a large scale, or the furnishing of goods in large quantities, whether for the public or a company or individual. Such are typically classified as *general contractors* (responsible for entire job) and *subcontractors* (responsible for only a portion of the job). A contractor is a person who, in pursuit of any independent business, undertakes to do a specific piece of work for another or other persons, using his/her own means and methods without submitting to their control in respect to all its details, and who renders service in the course of an independent occupation representing the will of his/her employer only as to the result of the work and not as to the means by which it is accomplished.

**contractor employee**

*Railroad.* A person employed by a contractor hired by a railroad to perform normal maintenance work to railroad rolling stock, track structure, bridges, buildings, etc.

**contractory tissue**

Any tissue which is capable of shortening in response to stimulation.

**contractual relationship**

Under the Comprehensive Environmental Response, Compensation, and Liabilities Act (CERCLA), includes, but is not limited to, land contracts, deeds or other instruments transferring title or possession, unless the real property on which the facility concerned is located was acquired by the defendant after the disposal or placement of the hazardous substance on, in, or at the facility, and one or more of the circumstances described in the list below is also established by the defendant by a preponderance of the evidence:

1. At the time the defendant acquired the facility the defendant did not know and had no reason to know that any hazardous substance which is the subject of the release or threatened release was disposed of on, in, or at the facility.

2. The defendant is a government entity which acquired the facility by escheat, or through any other involuntary transfer or acquisition or through the exercise of eminent domain authority by purchase of condemnation.
3. The defendant acquired the facility by inheritance or bequest.

**contracture**

Abnormal shortening of muscle tissue, rendering the muscle highly resistant to stretching. A contracture can lead to permanent disability. It can be caused by fibrosis of the tissues supporting the muscle or the joint, or by disorders of the muscle fibers themselves.

**contraflow lane**

Reserved lane for buses on which the direction of bus traffic is opposite to the flow of traffic on the other lanes.

**contrail**

Long, narrow clouds caused when high-flying jet aircraft disturb the atmosphere. Best formed in clear, cold, humid air. Also referred to more accurately but less commonly as *condensation trail*.



*Contrails created by a high-performance jet aircraft*

**contralateral**

Located on or pertaining to the opposite side of the body.

**contrast**

See *chromatic contrast* and *luminous contrast*.

**contrast attenuation**

A decrease in the amount of contrast over a space or time.

**contrast detection**

A basic visual task in which the visual system perceives a difference in luminance, creating an object and a background.

**contrast ratio**

A mathematical relationship involving some form of a ratio between figure luminance or reflectance and background luminance or reflectance. See also *luminance contrast*.

**contrast sensitivity**

A measure of the ability to perceive a visual contrast between two regions; the reciprocal of the contrast threshold.

**contrast threshold**

The smallest difference between two visual stimuli which is perceptible to the human eye under specified conditions of adaptation, luminance, and visual angle on a certain proportion of a set of trials. Also referred to as *liminal contrast*, *liminal contrast threshold*, and *threshold contrast*.

**contribution**

An area of the law dealing with seeking reimbursement from other responsible parties for an appropriate share of damages or expenses which must be paid.

**contributory event**

As pertains to fault tree analysis (FTA) and/or the management oversight and risk tree (MORT), an event that significantly influences the outcome of the top or primary event. Represented graphically as a rectangle and may also be referred to as a *main event* or *secondary event*.

**contributory negligence**

The act or omission amounting to want of ordinary care on the part of the complaining party which, occurring with the defendant's negligence, is a proximate cause of the injury. The proving of contributory negligence can significantly decrease or possibly eliminate any subsequent recovery on the part of the plaintiff(s).

**control**

(1) *Epidemiology/Toxicology*. The nature, number, and reproducibility of the controls (unexposed or unaffected) to determine the accuracy and significance of the conclusions from the experimental (exposed) cohort results. A most important factor in any study of



humans, animals, or biological organisms. *See also* [cohort study](#). (2) *Industrial Hygiene*. Measures, including engineering and administrative means, as well as the use of personal protective equipment, that are implemented to reduce, minimize, or otherwise reduce exposure to a health hazard. (3) *Radiation Protection*. Any action to stabilize, inhibit future misuse of, or reduce emissions or effluents from uranium byproduct materials.

**control area**

(1) *Interstate Highway System*. A metropolitan area, city or industrial center, a topographic feature such as a major mountain pass, a favorable location for a major river crossing, a road hub which would result in material traffic increments on the interstate route, a place on the boundary between two states agreed to by the states concerned, or other similar point of significance. (2) *Aviation*. A controlled airspace extending upward from a specified limit above the earth.

**control arrangement**

*See* [control layout](#).

**Control Assessment Protocol (CAP)**

A systematic procedure for clinicians to follow in the evaluation of disabled individuals for assistive devices.

**control cab locomotive**

A locomotive without propelling motors but with one or more control stands.

**control circuit**

An electrical circuit between a source of electric energy and a device which it operates.

**control coding**

The use of any of a variety of coding methods for labeling a control. *See* [color coding](#), [shape coding](#), [size coding](#), [label coding](#), and [location coding](#).

**control device**

*See* [direct manipulation device](#).

**control display layout**

*See* [display-control layout](#).

**control-display ratio**

The ratio of movement of a control to the movement or change of an indicator on a dis-

play. Synonymous with *control-response ratio*.

**control efficiency**

The ratio of the amount of pollutant removed from a source of release or emission by a control device, to the total amount of pollutant before control, and expressed as a percentage.

**control force**

That amount of force required to operate a control. *See also* [control torque](#) and [actuation force](#).

**control group**

A group of individuals or items selected from what is believed to be the same population as an experimental group, but which is not exposed to the experimental treatment(s) under consideration. Synonymous with *comparison group*.

**control layout**

The grouping of manual controls within a location at a workplace. Also referred to as control arrangement. *See also* [control location](#) and [display-control layout](#).

**control limit**

That boundary value which a measurement on some aspect or dimension of a product or system must not exceed.

**control location**

The general placement of controls for use by an operator. *See also* [control layout](#).

**control machine**

An assemblage of manually operated devices for controlling the functions of a traffic control system; it may include a track diagram with indication lights.

**control operator**

An employee assigned to operate the control machine of a traffic control system.

**control placement**

*See* [control location](#).

**control precision**

A psychomotor ability involving the positioning of larger muscle groups to make rapid, repeated adjustments to one or more controls.

**control-response ratio**

*See* [control-display ratio](#).

**control rod**

A rod used to control the nuclear power of a nuclear reactor. The reactor functions through the fission of nuclear fuel by neutrons. The control rod absorbs neutrons that would normally produce fission in the atoms of the fuel. Pushing the rod into the reactor reduces the release of nuclear power and pulling the rod out increases the rate.

**control sector**

*Aviation.* An airspace area of defined horizontal and vertical dimensions for which a controller or group of controllers has air traffic control responsibility, normally within an air route traffic control center or an approach control facility. Sectors are established based on predominant traffic flows, altitude strata, and controller workload. Pilot communications during operations within a sector are normally maintained on discrete frequencies assigned to the sector.

**control sensitivity**

The ratio between the amount of movement or change on a display and the control movement.

**control slash**

*Aviation.* A radar beacon slash representing the actual position of the associated aircraft. Normally, the control slash is the one closest to the interrogating radar beacon site. When Air Route Traffic Control Center (ARTCC) radar is operating in narrow band (digitized) mode, the control slash is converted to a target symbol.

**control spacing**

That distance between the human-operated mechanism for two or more control devices.

**control station**

The place where the control machine of a traffic control system is located. *See also* [control machine](#).

**control stick**

The primary control device on many types of aircraft, generally consisting of a rod-shaped structure extending from the floor in front of the pilot's seat with aircraft handling and other controls.

**control system**

(1) A system whose primary function is the monitoring of outputs from a given set of functions and using that data or information to

regulate that set in some specified manner or to propose new regulations. (2) A component, or system of components functioning as a unit, including control valves and sensing, warning, relief, shutdown, and other control devices, which is activated either manually or automatically to establish or maintain the performance of another component.

**control technique guidelines (CTG)**

A series of EPA documents designed to assist states in defining reasonable available control technologies (RACT) for major sources of volatile organic compounds (VOCs).

**control torque**

That amount of torque required to operate a rotary control. *See also* [control force](#) and [actuation force](#).

**control velocity**

*See* [capture velocity](#).

**controllable emergency**

An emergency where reasonable and prudent action can prevent harm to people or property.

**controlled access rights-of-way**

Lanes restricted for at least a portion of the day for use by transit vehicles and other high occupancy vehicles (HOVs). Use of controlled access lanes may also be permitted for vehicles preparing to turn. The restriction must be sufficiently enforced so that 95 percent of the vehicles using the lanes during the restricted period are authorized to use them. *See also* [right-of-way](#).

**controlled airspace**

An airspace of defined dimensions within which air traffic control service is provided to Instrument Flight Rules (IFR) flights and to Visual Flight Rules (VFR) flights in classification.

**controlled area**

(1) *General.* Specific area designated for the performance of certain work, usually work that is hazardous or sensitive in nature, where control measures have been implemented to prevent the unauthorized access of personnel into the area while the work is being performed. Control measures may include physical barriers, warning signs and signals, personnel monitoring, or any combination of these and/or other measures. (2) *Radiation.* A defined area in which the occupational expo-

sure of personnel to radiation or radioactive material is under the supervision of an individual responsible for radiation protection.

**controlled departure time programs (CDT programs)**

These programs are the flow control process whereby aircraft are held on the ground at the departure airport when delays are projected to occur in either the en route system or the terminal of intended landing. The purpose of these programs is to reduce congestion in the air traffic system or to limit the duration of airborne holding in the arrival center or terminal area. A CDT is a specific departure slot shown on the flight plan as an expected departure clearance time (EDCT).

**controlled experiment**

An experimental investigation in which the relevant independent variables are directly and systematically manipulated and/or controlled and the effects of such manipulation are measured. Also referred to as a *controlled study*.

**controlled motion**

See *controlled movement*.

**controlled movement**

Any controlled bodily movement in which prime mover and antagonist muscles are integrated using muscle contraction throughout the range of the motion to generate a desired force and/or velocity. Also referred to as *non-ballistic movement* and *tension movement*.

**controlled point**

*Aviation*. A location where signals and/or other functions of a traffic control system are controlled from the control machine. See also *control machine* and *control operator*.

**controlled study**

See *controlled experiment*.

**controlled substance**

Any drug so designated by law whose availability is restricted, i.e., so designated by federal or state Controlled Substances Acts. Included in such classification are narcotics, stimulants, depressants, hallucinogens, and marihuana.

**Controlled Substances Acts**

Federal and state acts (the latter modeled on the Uniform Controlled Substances Act) the purpose of which is to control the distribution,

classification, sale, and use of drugs. The majority of the states have such acts.

**controlled time**

That elemental time which is governed solely by some external process.

**controlled time of arrival**

The original estimated time of arrival adjusted by the ATCSCC ground delay factor.

**controller**

(1) Any device used for operating and/or regulating a system. (2) A device or group of devices that serves to govern, in some predetermined manner, the electric power delivered to the apparatus to which it is connected. (3) A person authorized to provide air traffic control services. See *air traffic controller*.

**controlling depth**

The least available water in a navigable channel which limits the amount of cargo that may be carried by the vessel.

**controlling locomotive**

A locomotive arranged as having the only controls over all electrical, mechanical and pneumatic functions for one or more locomotives, including controls transmitted by radio signals if so equipped. It does not include two or more locomotives coupled in multiple which can be moved from more than one set of locomotive controls.

**contusion**

Injury to tissues without breakage of the skin; a bruise. In a contusion, blood from the broken vessels accumulates in surrounding tissues, producing pain, swelling, and tenderness. A discoloration appears as a result of blood seepage under the surface of the skin. Serious complications may develop in some cases of contusion. Normally, blood is drawn off from the bruised area in a few days. But there is a possibility that blood clotted in the area will form a cyst or calcify and require surgical treatment. The contusion may also be complicated by infection.

**convection**

The transfer of heat from one place to another by moving fluid (a gas or a liquid). Natural convection results from differences in temperature. The rising of heated surface air and the sinking of cooler air aloft is often called *free convection* (as opposed to *forced convection*).

**convection heat load**

The amount of heat energy transferred between the skin and the air. Human skin is normally 95°F (35°C). Air in excess of that temperature will warm the body, whereas air below that temperature will cool the body.

**convective condensation level (CCL)**

The level above the surface marking the base of a cumuliform cloud that is forming due to surface heating and rising thermals.

**convective heat loss**

That amount of heat eliminated from the body via convection, indicated by an equation of the form:

$$H = h_c A (T_s - T_a)$$

where:

- $H$  = convective heat loss
- $h_c$  = convective heat transfer coefficient
- $A$  = body surface area
- $T_s$  = weighted mean skin temperature
- $T_a$  = air temperature

**convective heat transfer coefficient ( $h_c$ )**

A number which includes factors for clothing thermal characteristics and environmental conditions.

**convective instability**

Instability arising in the atmosphere when a column of air exhibits warm, moist, nearly saturated air near the surface and cold, dry air aloft. When the lower part of the layer is lifted and saturation occurs, it becomes unstable.

**conventional anthropometry**

See *classical anthropometry*.

**conventional cab**

A cab design in which the engine is located ahead, or mostly ahead, of the cowl.

**conventional memory**

*Computing.* The base RAM on a computer, typically the first 640 kilobytes. Conventional memory is the only kind of RAM that MS-DOS-based applications can use, unless an expanded memory manager (EMM) is used. See also *extended memory and expanded memory*.

**conventional pollutants**

Statutory listed pollutants the nature of which is understood well by the scientific community. These may be in the form of organic waste, sediment, acid, bacteria and viruses, oil and grease, or heat.

**conventional systems**

Systems that have been traditionally used to collect municipal wastewater in gravity sewers and convey it to a central primary or secondary treatment plant prior to discharge to surface waters.

**convergence**

(1) *General.* A coordinated inward rotation of the eyes about their vertical axis to fixate on a point near the observer to obtain fusion. (2) *Meteorology.* An atmospheric condition that exists when the winds cause a horizontal net inflow of air into a specified region.

**convergence angle**

That angle formed by the intersection of the line of sight of each eye when both eyes are fixated at a single point.

**convergence point**

That location on a curve at which a worker's learning curve achieves standard performance.

**convergent phoria**

A tendency for an observer to fixate in front of a stationary target.

**conversion**

(1) The act of changing into something of different form or properties. (2) The transformation of emotions into physical manifestations.

**conversion factor**

A number that translates units of one system into corresponding values of another system. Conversion factors can be used to translate physical units of measure for various fuels into British Thermal Unit (BTU) equivalents. See also *British Thermal Unit*.

**converter dolly**

A motor vehicle consisting of a chassis equipped with one or more axles, a fifth wheel and/or equivalent mechanism, and drawbar, the attachment of which converts a semitrailer to a full trailer.

**convertible**

A truck or trailer that can be used either as a flatbed or open-top by removing side panels.

**convertible collision insurance**

Type of collision coverage generally carrying lower premium but requiring higher premium after the first loss or claim (an alternative form of deductible collision coverage). *See also insurance.*

**convertible insurance**

A policy that may be changed to another form by contractual provision and without evidence of insurability. Usually used to refer to term life insurance convertible to permanent insurance. *See also insurance.*

**convertible life insurance**

Generally a form of term life insurance which gives the insured the right to change the policy to permanent life insurance without requiring a medical examination of the insured party. *See also insurance.*

**convex function**

A mathematical relationship or graph having positive second derivative over a specified interval of interest, resulting in a U-shaped curve.

**conveyance**

In its most common usage, the transfer of title to land from one person, or class of persons, to another by deed.

**conviction**

The end of a criminal legal proceeding by a determination of guilt.

**convulsion**

Involuntary spasm or contraction of muscles. In general, there are three types of convulsions: *clonic*, in which opposing muscles contract and relax alternately producing rhythmic movements; *tonic*, in which all the muscles tighten until the victim becomes rigid; and those that occur in *Jacksonian epilepsy*, in which the muscular twitching begins in one area and spread to another.

**cooking unit, counter-mounted**

A cooking appliance designed for mounting in or on a counter and consisting of one or more

heating elements, internal wiring, and built-in or separately mountable controls.

**cool color**

A blue or green color, or a color which appears less bright than another for a given intensity.

**coolant**

A liquid or gas used to reduce the heat generated by power production in nuclear reactors, electric generators, various industrial and mechanical processes, and automobile engines.

**cooling degree day**

A form of degree-day used in estimating the amount of energy necessary to reduce the effective temperature of warm air. A cooling degree-day is a day on which the average temperature is one degree above a desired base temperature.

**cooling pond**

A pond where water is cooled by contact with air prior to reuse or discharge.

**cooling tower**

An open water recirculating device that uses fans or natural draft to draw or force ambient air through the device to cool warm water by direct contact.

**cooling tower blowdown**

A side-stream of water discharged from a cooling tower recirculation system to prevent scaling or precipitation of saturated salts or minerals.

**cooling water**

Water used, usually in a condenser, to reduce the temperature of liquids or gases.

**Cooper Scale**

A no longer used rating scale with a range of 1 (excellent) through 10 (fatal) which was developed in an attempt to have pilots provide more objective evaluations of aircraft handling qualities. Also referred to as the *Cooper Rating Scale*.

**Cooper-Harper scale**

An ordinal rating procedure using a decision tree on a scale of 1 (excellent) through 10 (major deficiencies) for task difficulty. Designed originally for use by test pilots for evaluating aircraft handling, but has been used in other physical workload situations as

well. Also referred to as *Cooper-Harper aircraft handling characteristics scale*.

**Cooper-Harper Scale, modified**

An ordinal rating procedure using a decision tree on a scale of task difficulty ranging from 1 (very easy) through 10 (impossible) for mental workload determinations.

**cooperation clause**

That provision in insurance policies which requires the insured to cooperate with the insurer in defense of a claim.

**coordinate**

(1) A position in space, time, amplitude, or some other dimension. (2) To cause separate entities to act together harmoniously toward a final goal.

**coordinate system**

A spatial reference system with a defined origin and rules for defining locations within that system. *See also rectangular coordinate system.*

**coordinate transformation**

Any mathematical or graphical process for modifying or shifting a coordinate system.

**coordinates**

The intersection of lines of reference, usually expressed in degrees/minutes/seconds of latitude and longitude, used to determine position or location.

**coordination fix**

The fix in relation to which facilities will handoff, transfer control of an aircraft, or coordinate flight progress data. For terminal facilities, it may also serve as a clearance for arriving aircraft.

**co-partnership incentive plan**

An incentive plan in which workers have the opportunity to own a share of the business enterprise, thus obtaining some portion of the profits resulting from that ownership.

**coping**

The top or covering of an exterior masonry wall.

**copolymer**

A long-chain molecule resulting from the reaction of more than one monomer species with another.

**copper**

A chemical element, atomic number 29, atomic weight 63.54, symbol Cu. It is necessary for bone formation and for the formation of blood because it acts as a catalyst in the transformation of inorganic iron into hemoglobin. There is little danger of deficiency in ordinary diets because of relatively abundant supply and minute daily requirements.

**copper-nickel**

A copper alloy containing 10-30% nickel to increase resistance to corrosion and stress corrosion cracking. Also called *cupronickel*.

**copper sulfate**

Chemical used for algae control, also called *blue vitriol*. Chemical formula is  $\text{CuSO}_4$ .

**coppers**

Common name for ferrous sulfate heptahydrate, a common coagulant. Chemical formula is  $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$ .

**coproporphyrin**

A porphyrin that is formed in the blood-forming organs and found in the urine and feces.

**copter**

*See helicopter.*

**copy**

A computer operation system function which duplicates a file or segment in another location while leaving the original file or segment intact.

**copyright**

The right of literary property as recognized and sanctioned by positive law. An intangible, incorporeal right granted by statute to the author or originator of certain literary or artistic productions, whereby he/she is invested, for a specified period, with the sole and exclusive privilege of multiplying copies of the same and publishing and selling them.

**cordelle**

A hawser; a towline such as those used to pull keelboats in the French-speaking parts of North America.

**core**

The heart of the nuclear reactor where the nuclei of the fuel undergo fission (spilt) and release energy. The core is usually sur-



rounded by a reflecting material that bounces stray neutrons back to the fuel.

**core temperature**

The temperature in the central part of the body. Rectal temperature is considered a measure of core temperature.

**CORELAP**

See *Computerized Relationship Layout Planning*.

**core-shell model**

A simple thermodynamic concept in which the human is treated as having a heat-producing core and a surrounding shell, with heat exchange occurring through the shell to the environment.

**Coriolis acceleration**

That acceleration generated by the simultaneous exposure to rotational motion about two axes in an internal reference frame.

**Coriolis effect**

The misperception of body orientation, commonly accompanied by nausea and vertigo on exposure to Coriolis acceleration.

**Coriolis force**

An apparent force observed on any free-moving object in a rotating system. On the earth, this deflective force results from the earth's rotation and causes moving particles (including the wind) to deflect to the right in the Northern Hemisphere and to the left in the Southern Hemisphere.

**corium**

The fibrous inner layer of the skin, derived from the embryonic mesoderm, varying from 1/50 to 1/8 inch in thickness, well supplied with nerves and blood vessels and containing hair roots and sebaceous and sweat glands; on the palms and soles it bears ridges whose arrangement in whorls and loops is peculiar to the individual (fingerprints and footprints).

**cornea**

The clear, transparent anterior covering of the eye. The cornea is subject to injury by foreign bodies in the eye, bacterial infection, and viral infection, especially by the herpes simplex virus. The herpes zoster virus, which causes "shingles," can also infect the cornea. Prompt treatment of any corneal injury or in-

fection is essential to avoid ulceration and loss of vision.

**corneal reflex**

A reflex action of the eye resulting in automatic closing of the eyelid when the cornea is stimulated. The corneal reflex can be elicited in a normal person by gently touching the cornea with a wisp of cotton. Absence of the corneal reflex indicates deep coma or injury of one of the nerves carrying the reflex action.

**corneo-retinal potential (CRP)**

The bioelectric potential between the anterior and posterior eyeball.

**corner sweep**

Scraper used to remove sludge from the corner of a square clarifier.

**corona**

(1) *General*. A crown-like structure or part, as the top of the head or the upper part of a tooth. (2) *Astronomy*. A luminous circle around one of the heavenly bodies, as when seen through cloud or mist. (3) *Astrophysics*. The luminous envelope of ionized gases visible during a total eclipse of the sun. (4) *Electricity*. The luminous discharge appearing at the surface or between the terminals of an electrical conductor under high voltage.

**coronal plane**

See *frontal plane*. (Note: The term is often used instead of *frontal plane* in conjunction with the brain.)

**coronary**

Pertaining to blood vessels or nerves which encircle an organ or other structure, especially the heart.

**coronary occlusion**

The blockage of an artery supplying blood to the muscle tissue of the heart.

**coronoid process**

A projection from the proximal end of the ulna which fits into the coronoid fossa on flexion of the elbow.

**corporate average fuel economy (CAFE) standards**

CAFE standards were originally established by Congress for new automobiles, and later for light trucks, in Title V of the Motor Vehicle Information and Cost Savings Act (15 U.S.C. 1901, et seq.) with subsequent amendments.

Under CAFE, automobile manufacturers are required by law to produce vehicle fleets with a composite sales-weighted fuel economy which cannot be lower than the CAFE standards in a given year, or for every vehicle which does not meet the standard, a fine of \$5.00 is paid for every one-tenth of a mpg below the standard.

**corporate code of conduct**

A statement of the corporation's ethical standards and special goals, which is clearly stated and widely publicized. Includes standards of business conduct related to both legal compliance and general organizational requirements and legal responsibilities to not engage in conduct that would otherwise result in legal liability.

**corporate compliance officer**

A high-level employee with a substantial role in the making of policy within an organization to create and monitor the compliance program oversight and enforcement. The individual should be of the highest integrity and be knowledgeable of every function of the organization's business. The individual should also have sufficient command authority so his or her decisions will not be easily countermanded.

**corporate/executive flying**

The use of aircraft owned or leased, and operated by a corporate or business firm for the transportation of personnel or cargo in furtherance of the corporation's or firm's business, and which are flown by pilots working for compensation.

**corporate probation**

Under the Federal Sentencing Guidelines (FSGs), an appropriate sentence for an organization under the FSGs when needed to ensure that another sanction will be fully implemented, or to ensure that steps will be taken within the organization to reduce the likelihood of future criminal conduct. Often mandated under the FSGs for an organization with 50 or more employees without an effective compliance program. Conditions of probation can include requiring the organization to publicize the nature of the offense or to develop a compliance program satisfactory to the court. *See also effective compliance program.*

**corpuscle**

A blood cell.

**corrected effective temperature (CET)**

A measure of environmental heat stress which includes average radiant temperature and globe temperature effects.

**correction**

*Aviation (communication)* An error has been made in the transmission and the correct version follows.

**corrective action**

*See cleanup.*

**corrective lens**

An eyeglass lens that has been ground to the wearer's individual prescription to enable normal visual acuity.

**corrective maintenance**

A form of maintenance which is intended to return a system or piece of equipment to proper operating status after it has failed. Also referred to as *breakdown maintenance*, *unscheduled maintenance*, and *remedial maintenance*.

**correlated color temperature**

That temperature of a Planckian radiator whose perceived color most closely resembles that of a given stimulus source when viewed at the same brightness and under specified viewing conditions.

**correlated work crew**

A group of workers who interact with each other or work together on a task, such that each individual's work is not independent.

**correlation**

The degree of association between variables. The simultaneous increase or decrease in the value of two random variables (positive correlation), or the simultaneous increase in the value of one and decrease in the value of the other (negative correlation).

**correlation coefficient**

A number between 1.0 and -1.0 which represents the degree and direction of correlation between two variables.

**correlative kinesiology**

*See electromyographic kinesiology.*

**corridor**

*Transportation.* A broad geographical band that follows a general directional flow connecting major sources of trips that may con-

tain a number of streets, highways, and transit route alignments.

**corrode**

The gradual breaking down, wearing away, or alteration of a structure due to the action of air, moisture, or a chemical.

**corrosion**

Physical damage, usually in the form of deterioration or destruction caused by chemical or electrochemical action as contrasted with erosion caused by mechanical reaction.

**corrosive**

A chemical agent that reacts with the surface of a material (including skin) causing it to deteriorate or wear away.

**corrosive waste**

Waste having the ability to corrode standard containers or to dissolve toxic components or other waste.

**corrosivity**

The ability of a substance to produce corrosion.

**corrugated plate interceptor (CPI)**

Oil separation device utilizing inclined corrugated plates to separate free non-emulsified oil and water based on their density difference.

**cortex**

The outer portion of an organ or structure, usually referring to the brain, adrenal gland, or bone.

**cortical bone**

The compact bone tissue next to the surface of a bone.

**corticospinal system**

See *pyramidal system*.

**corticosteroid**

Any of the hormones elaborated by the cortex of the adrenal gland.

**corundum**

Natural aluminum oxide material that may contain traces of iron, magnesium, and silica.

**coryza**

An acute inflammation of the nasal mucous membrane, with profuse discharge.

**cosine**

A trigonometric function; the value of the ratio of the adjacent side of an acute angle to the hypotenuse in a right triangle.

**cosine law of illumination**

A rule that the illumination on any surface changes according to the cosine of the incident light angle from perpendicular to the surface. Represented as:

$$E = \frac{I \cos \Theta}{d^2}$$

where:

$E$  = illumination level

$I$  = intensity of light source

$\Theta$  = the angle of incidence of the light from perpendicular

$d$  = the distance from the light source

**cosmetic**

Under the Federal Food, Drug, and Cosmetic Act, articles intended to be rubbed, poured, sprinkled, or sprayed on, introduced into, or otherwise applied to the human body or any part thereof or cleansing, beautifying, promoting attractiveness, or altering the appearance; and articles intended for use as a component of any such articles; except that such term shall not include soap.

**cosmic radiation**

Penetrating ionizing radiation, both particulate and electromagnetic, originating in outer space. Secondary cosmic rays, formed by interactions in the earth's atmosphere, add to the general background radiation.

**cosmic ray**

See *cosmic radiation*.

**cost**

Those expenses incurred in producing a product, delivering goods, or providing a service, whether financial, human, or metabolic.

**cost-benefit analysis**

(1) *General*. The determination or estimation and evaluation of the weighted relative financial, social, and/or other costs to the same or other categories of rewards or compensation. It should be performed prior to undertaking the endeavor being considered. (2) *System Safety*. A system safety analytical technique used to evaluate various possible courses of

action with respect to the costs that are incurred compared to the benefit of the results.

**cost-effective alternative**

An alternative control or corrective regulatory or compliance method identified by the EPA after analysis as being the best available in terms of reliability, performance, and economic considerations (i.e., when selecting a method for cleaning up a site on the Superfund National Priorities List, the EPA balances costs with the long-term effectiveness of the various methods proposed).

**cost-effectiveness**

The relative financial or other benefits obtained compared to the cost of alternatives.

**Cost, Insurance, Freight (CIF)**

A type of sale in which the buyer of the product agrees to pay a unit price that includes the f.o.b. value of the product at the point of origin plus all costs of insurance and transportation. This type of transaction differs from a delivered purchase in that the buyer accepts the quantity as determined at the loading port (as certified by the Bill of Lading and Quality Report) rather than pay on the basis of the quantity and quality ascertained at the unloading port. It is similar to the terms of an f.o.b. sale, except that the seller, as a service for which he/she is compensated, arranges for transportation and insurance.

**cost of accidents per employee (CAE)**

The cost of the accidents incurred per year spread across the average number of employees, as in the following formula:

$$CAE = \frac{\text{total accident costs}}{\text{average number of employees}}$$

**cost recovery**

A legal process by which potentially responsible parties (PRPs) who contributed to the contamination at a Superfund site can be required to reimburse the Trust Fund for money spent during any cleanup actions by the federal government.

**costal cartilage**

That segment of cartilage which attaches a rib to the sternum or, in some cases, to adjacent ribs.

**COTP**

*See captain of the port.*

**coulomb**

A quantity of electric charge equal to one ampere second.

**coulomb friction**

That friction from movement between dry surfaces.

**Council on Environmental Quality (CEQ)**

An agency created under Section 202 of the National Environmental Policy Act (NEPA) in January of 1970. Before its abolishment by President Clinton on 8 February 1993, the CEQ consisted of three members, appointed by the President, with advice and consent from the Senate. Under NEPA, the CEQ provided advice to the President on federal programs and policies affecting the environment and also prepared an annual Environmental Quality Report (EQR) for Congress that described the state of the environment in the United States and reported the status of specific initiatives during the previous year. Prior to 1978, the CEQ only issued guidelines, which were merely advisory and had no force of law behind them. Federal agencies could either follow these recommendations or pursue an alternate course of action. But in 1978, as a result of an Executive Order, CEQ issued regulations that required all federal agencies to implement NEPA. Upon its abolishment, President Clinton created a new office called the Office of Environmental Policy (OEP). *See also Office of Environmental Policy.*

**councilman**

*See alderman.*

**count**

The external indication of a device designed to enumerate ionizing events. It may refer to a single detected event or the total measured in a given time period.

**counter**

(1) The top flat surface of a work space. (2) A device for counting nuclear disintegrations used to measure radioactivity. (3) Any device or system which keeps track of incrementing or decrementing numbers of objects or events.

**counterfeit drug**

Under the Federal Food, Drug and Cosmetic Act, a drug which, or the container or labeling of which, without authorization, bears the trademark, trade name, or other identifying

mark, imprint, or device, or any likeness thereof, of a drug manufacturer, processor, packer, or distributor other than the person or persons who in fact manufactured, processed, packed, or distributed such drug and which thereby falsely purports or is represented to be the product of, or to have been packed or distributed by, such other drug manufacturer, processor, packer, or distributor.

**countermeasure**

An action taken in opposition to another.

**country breeze**

A light breeze that blows into a city from surrounding countryside. It is best observed on clear nights when the urban heat island is most pronounced. *See also urban heat island.*

**county attorney**

*See district attorney.*

**coupled approach**

*Aviation.* A coupled approach is an instrument approach performed by the aircraft autopilot which is receiving position information and/or steering commands from onboard navigation equipment. In general, coupled non-precision approaches must be discontinued and flown manually at altitudes lower than 50 feet below the minimum descent altitude, and coupled precision approaches must be flown manually below 50 feet ALG. Note: Coupled and autoland approaches are flown in Visual Flight Rules (VFR) and Instrument Flight Rules (IFR). It is common for carriers to require their crews to fly coupled approaches and autoland approaches (if certified) when the weather conditions are less than approximately 4,000 Runway Visual Range (RVR). *See also autoland approach.*

**coupler**

A device for locking together the component parts of a tubular metal scaffold. The material used for the couplers shall be of a structure type, such as a drop-forged steel, malleable iron, or structural grade aluminum. The use of gray cast iron is prohibited.

**coupling**

Any of a variety of possible interfaces between the hand or robotic grapple fixture and another objects for purposes of gripping or touching.

**coupon test**

A method of determining the rate of corrosion or scale formation by placing metal strips, or coupons, of a known weight in a tank or pipe.

**courier services (except by air)**

Establishments primarily engaged in the delivery of individually addressed letters, parcels, and packages (generally under 100 pounds), except by means of air transportation or by the U.S. Postal Service.

**course**

(1) The intended direction of flight in the horizontal plane measured in degrees from north. (2) The Instrument Landing System (ILS) localizer signal pattern usually specified as the front course or the back course. (3) The intended track along a straight, curved, or segmented Microwave Landing System (MLS) path. *See also bearing and flight path.*

**course of employment**

These words, as applied to compensation for injuries within the purview of workers' compensation acts, refer to the time, place, and circumstances under which the accident takes place. A worker is in the course of employment when, within the time covered by employment, he/she is doing something which he/she might reasonably do while so employed at a proper place.

**courseware**

That application or system software and the programmed/coded information base which are used to provide the information and interactions in a computer-based instruction system.

**Court of Appeals**

In those states with courts of appeals, such courts are usually intermediate appellate courts (with the highest appellate court being the state Supreme Court).

**covariate**

A variable which is related to and varies as the predictor and outcome variables do.

**covenant**

One of a number of enforceable promises which can govern the use of land. Others are called *restriction, easement, and equitable servitude.*



**cover**

Vegetation or other material providing protection as ground cover.

**cover material**

Soil or other suitable material used to cover compacted solid waste in a sanitary or secure landfill.

**coverage**

The number of jobs or the number of personnel whose jobs have been assigned standards during a particular period.

**coverage ratios**

*Transportation.* The ratio used to measure the degree to which expenditures are funded or "covered" by the various types of revenues. This ratio indicates the percent of expenditures that is funded by identifiable transportation-related tax receipts, fees, etc.

**covered fleet**

Under the provisions of the Clean Air Act (CAA), 10 or more motor vehicles that are owned or operated by a single person. In determining the number of vehicles owned or operated by a single person for purposes of the CAA, all motor vehicles owned or operated, leased, or otherwise controlled by such person, by any person who controls such person, by any person controlled by such person, and by any person under common control with such person shall be treated as owned by such person.

**covered fleet vehicle**

Under the provisions of the Clean Air Act (CAA), only a motor vehicle which is in a vehicle class for which standards are applicable under the CAA and in a covered fleet which is centrally fueled (or capable of being centrally fueled). No vehicle which under normal operations is garaged at a personal residence at night shall be considered to be a vehicle which is capable of being centrally fueled within the meaning of the CAA.

**covert behavior**

Any behavior consisting of actions not directly viewable by an external observer.

**covert lifting task**

An operation in which body parts are moved, thus involving biomechanical aspects of the body, but which doesn't involve the handling

of a load other than the body parts themselves.

**cowboy**

*Transportation (slang).* Reckless driver.

**cowl**

The front part of a cab or body directly below the base of the windshield, between fire wall and instrument panel, and usually including the hood.

**coxal bone**

A bone consisting of the fused ileum, pubis, and ischium making up part of the pelvic girdle. Commonly referred to as *hip bone*, *pelvic bone*, and also known as *innominate bone*.

**CPI**

See *corrugated plate interceptor*. See also *Consumer Price Index*. Also, an acronym for *chemical process industry*.

**cpm**

Counts per minute.

**CPM**

See *Critical Path Method*.

**cps**

Cycles per second.

**CPSC**

Consumer Product Safety Commission (United States).

**CPVC**

Chlorinated polyvinyl chloride. A chlorinated form of PVC that provides increased heat resistance.

**crack**

(1) *General* An illicit drug of abuse derived primarily from cocaine but also may contain a variety of fillers and/or other materials that may or may not be considered "drugs." (2) *Structural Dynamics.* A fracture without complete separation into parts, except that castings with shrinkage cracks or hot tears that do not significantly diminish the strength of the member are not considered to be cracked.

**cradle-to-grave**

Under RCRA, the common term used to emphasize the extent of hazardous waste management responsibilities. Basically, hazardous wastes must be properly managed and those who participate in that management are held responsible from the moment it is gener-



ated (i.e., its creation) up to the time it is either neutralized, destroyed, or otherwise disposed of properly.

#### **CRAFT**

See *Computerized Relative Allocation of Facilities Technique*.

#### **cramps**

Common term for sudden, involuntary muscular contractions which cause severe pain. Painful muscle spasms in the extremities, back, or abdomen, as a result of, or due in part to excessive loss of salt during sweating.

#### **crane**

A mechanical device intended for lifting or lowering a load and moving it horizontally, in which the hoisting mechanism is an integral part of the machine. A crane may be a fixed or mobile machine.

#### **cranial**

Pertaining to the cranium.

#### **cranial length**

The linear distance from glabella to opisthocranium.

#### **cranial nerves**

Nerves that are attached to the brain and pass through the openings of the skull. There are 12 pairs of cranial nerves, symmetrically arranged so that they are distributed mainly to the structures of the head and neck. The one exception, the vagus nerve, extends beyond the head and carries among its fibers the motor fibers that go to the bronchi, stomach, gallbladder, small intestine, and part of the large intestine. It also carries the fibers that control the release of secretions of the gastric glands and the pancreas, and inhibitory fibers to the heart.

#### **cranial suture**

A suture between two bones enclosing the brain.

#### **craniosacral**

See *parasympathetic*.

#### **craniostat**

A device for measuring the facial angle.

#### **cranium**

The skeleton of the head, exclusive of the mandible and facial bones.

#### **crash**

An event that produces injury and/or damage, involves a motor vehicle in transport, and occurs on a traffic way or while the vehicle is still in motion after running off the traffic way. See also *accident, casualty, collision, derailment, fatality, event, hit and run, incident, injury, vehicle maneuver, and vehicle role*.

#### **Crash Injury Research (CIR) project**

A U.S. government-sponsored project intended to determine the causes of aircraft accidents and record the injuries sustained in each accident. (Note: An older program; now referred to as Aviation Safety Engineering and Research.)

#### **crash safety**

A measure of a vehicle's ability for the occupant(s) to survive an impact and evacuate the vehicle following impact.

#### **crash severity**

The most severe injury sustained in the crash as recorded on the police accident report: Property Damage Only (no injuries), Minor or Moderate (Evident, but not incapacitating; complaint of injury; or injured, severity unknown), Severe or Fatal (killed or incapacitating).

#### **Crash Survival Design Guide (CSDG)**

A multiple volume document providing information on various aspects of aircraft design criteria which enhance crew and passenger survival during and following a crash.

#### **crash type**

Single vehicle or multiple vehicle crash.

#### **crash worthiness**

A measure of the capability of a vehicle to act as a protective container and energy absorber during impact.

#### **CRAVE**

See *carcinogen risk assessment verification endeavor work group*.

#### **crawl**

A type of locomotion which involves moving in approximately a prone position, using the hands/elbows and knees for support and movement.

#### **crawl space**

A region of low height, generally under a large structure of some type, through which a

worker may access certain utilities connections or other equipment.

**crawling board**

A plank with cleats spaced and secured at equal intervals, for use by a worker on roofs, not designed to carry any material. Also referred to as a *chicken ladder*.

**creativity**

The ability to generate ideas for novel approaches, devices, or artistic works through imagination, thinking, or considering a situation from a different perspective.

**credibility**

Worthiness of belief; that quality in a witness which renders his/her evidence worthy of belief. After the competence of a witness is allowed, the consideration of his/her credibility arises, and not before. As to the distinction between competency and credibility, see [competency](#).

**credible failure**

Any failure that can physically occur without violating any scientific law.

**creep**

(1) *Work Mechanics*. A change in a work method within a task by a worker occurring over an extended period of time. (2) *Seismology*. Relatively slow, quiet movement along a fault. It is sometimes called *seismic creep* to distinguish it from the slumping of rock or soil on slopes (which is also known as creep), and sometimes called *aseismic creep* since it does not trigger events greater than *microearthquakes*.

**creeper gear**

Lowest gear or combination of gears used for extra power. Also known as *grandma*.

**crenothrix**

See *iron bacteria*.

**crepuscular rays**

Alternating light and dark bands of light that appear to fan out from the sun's position, usually at twilight.

**crest factor**

The ratio of the peak value of a vibratory motion to the root mean square value of that motion over a specified time interval.

**crest of flood**

Rise in river has reached its peak.

**crevasse**

A deep fissure in snow or ice.

**crevasse field**

An area of deep fissures in the surface of an ice mass caused by breaking or parting.

**crevice corrosion**

Localized corrosion in narrow crevices filled with liquid.

**CREW CHIEF**

A computerized, 3-dimensional human modeling program for simulating an aircraft maintenance person with respect to accessibility of components for maintenance and ultimately to the incorporation of such data into aircraft design.

**crew-induced load**

The reaction forces exerted by an individual on a structure as a result of that individual exerting effort with or reacting to external forces caused by another object on another portion of the body.

**crew load**

The number of personnel used to perform work on a certain product or component.

**crew member**

(1) *Aviation*. A person assigned to perform duty in an aircraft during flight time. (2) *Railroad*. A person, other than a passenger, who is assigned to perform either a) on-board functions connected with the movement of the train (i.e., an employee of a railroad, who is assigned to perform service subject to the federal hours of service laws during a tour of duty) or, b) on-board functions in a sleeping car or coach assigned to intercity service, other than food, beverage, or security service.

**crew station**

Any workstation or work site within a vehicle intended for use during vehicular operation by one or more members of the crew of that vehicle.

**CRI**

See [CIE color rendering index](#).

**crib**

*Maritime*. A crate-like construction of logs or beams, usually filled with stones, placed in water as a free-standing mooring device or as the foundation of a pier or wharf.

**crib area**

Containing one or more cribs, (frames of logs or beams filled with heavy material that are sunk and used as foundations or retaining walls for docks, piers or similar structures, or as supports for pipelines).

**cricoarytenoid**

See *posterior cricoarytenoid and lateral cricoarytenoid*.

**cricoid cartilage**

A ring-shape piece of cartilaginous tissue encircling the airway passage in the larynx.

**cricothyroid**

A skeletal muscle in the larynx involved in producing tension and elongation of the vocal cords.

**criminal**

The term applied to any proceeding the resolution of which can result in incarceration and/or monetary fines. Most alleged crimes are either misdemeanors or felonies.

**criminal damage**

(1) Willfully injuring, damaging, mutilating, defacing, destroying, or substantially impairing the use of any property in which another has an interest without the consent of such other person. (2) Injuring, damaging, mutilating, defacing, destroying, or substantially impairing the use of any property with intent to injure or defraud an insurer or lien holder. Note: Criminal damage to property is by means other than fire or explosive.

**crinion**

The point in the midsagittal plane where the hairline meets the forehead. In a balding or hairless individual, estimate where the hair growth line would be if he had normal hair.

**crisis management team**

Corporate executives or key officers and advisors of an organization who would form the organization's nerve center in a crisis situation. This group, usually headed by the organization's chief executive officer, would receive information about a crisis directly and would formulate the organization's responses. The team should be trained and warned of the types of crises to be expected. They should monitor relevant legal trends and conduct mock exercises. The team may also decide upon whether to self-report a violation of the law to a regulatory agency.

**crista**

The sensory structure within the ampulla of a semicircular canal, which detects motion of the head; composed primarily of the cupula and sensory hair cells.

**crystalite**

A crystalline form of silica.

**critale**

See *iliac crest*.

**criteria**

(1) Exposure values or concentrations based on scientific information and used in the regulation of substances. (2) Descriptive factors taken into account by EPA in setting standards for various pollutants. These factors are used to determine limits on allowable concentration levels and to limit the number of violations per year. When issued by EPA, the criteria provide guidance to the states on how to establish their standards.

**criteria pollutants**

The 1970 amendments to the Clean Air Act required the EPA to set National Ambient Air Quality Standards (NAAQS) for certain pollutants known to be hazardous to human health. The term "criteria pollutants" derives from the requirements that the EPA must describe the characteristics and potential health and welfare effects of these pollutants. It is on the basis of these criteria that standards are set or revised. These pollutants include carbon monoxide, hydrocarbons, lead, nitrogen dioxide, sulfur dioxide, ozone, and suspended particulates.

**criterion**

A standard, rule, or test on which a judgment or decision can be based.

**criterion-related validity**

The usefulness of some test as a predictor in job performance.

**criterion sound level**

A sound level of 90 decibels (OSHA).

**criterion variable**

The variable consisting of the observed result in a correlation or regression study. Analogous to the dependent variable in experiments.

**critical**

Pertaining to an aspect of such importance that an operation cannot proceed without it or a situation may become life-threatening.

**critical altitude**

The maximum altitude at which, in standard atmosphere, it is possible to maintain, a specified power or a specified manifold pressure at a specified rotational speed. Unless otherwise stated, the critical altitude is the maximum altitude at which it is possible to maintain, at the maximum continuous rotational speed, one of the following: a) the maximum continuous power, in the case of engines for which this power rating is the same at sea level and at the rated altitude; b) the maximum continuous rated manifold pressure, in the case of engines, the maximum continuous power of which is governed by a constant manifold pressure.

**critical condition**

The most severe environmental condition in terms of loads, pressures, and temperatures, or combinations thereof. Imposed on structures, systems, subsystems, and components during service life.

**critical damping**

The minimum viscous damping that will allow a displaced system to return to its initial position without oscillation.

**critical engine**

The engine whose failure would most adversely affect the performance or handling qualities of an aircraft.

**critical equipment**

Equipment that is likely to result in a major problem or loss if damaged, operates improperly, or ceases to operate for whatever cause, and is therefore considered vital to the continued effective safe operation of the system or process.

**critical event**

*System Safety.* An occurrence, subsequent to the introduction of a hazard or set of hazards into a system, that results in a level of injury, damage, or loss of a magnitude for which quick or total recovery would be possible, although extremely difficult (e.g., personnel injuries, partial system loss, property or

equipment damage, etc.). The parameters for this categorization are usually established by management in the System Safety Program Plan, or other policy-making documentation.

**critical flaw**

A specific shape of flaw with sufficient size that unstable growth will occur under the specific operating load and environment.

**critical flicker frequency (cff)**

See *flicker fusion frequency*.

**critical flow**

The rate of flow of a fluid equal to the speed of sound in that fluid.

**critical flow orifice**

A device used for determining volumetric flow rate with an accuracy of plus or minus 10% if made to standardized dimensions.

**critical function**

An activity or operation which can have a major impact on system performance or can endanger workers or the project if it fails.

**critical fusion frequency (cff)**

See *flicker fusion frequency*.

**critical habitat**

Under the Federal Threatened Species Act of 1973, the specific areas occupied by the species, at the time it is listed in accordance with the provisions of the Act on which are found those physical or biological features essential to the conservation of the species and which may require special management considerations or protection; and specific areas outside the geographical area occupied by the species at the time it is listed in accordance with the provisions of the Act, upon a determination of the Secretary of the Interior that such areas are essential for the conservation of the species.

**critical incident method**

A performance appraisal technique for either a system or employee. For a system: the process of gathering data by asking the users of that system to describe significant incidents, according to some established criteria. For an employee: the maintenance of a log documenting both favorable and unfavorable behaviors exhibited during an evaluation period. Synonymous with *critical incident technique*.

**critical job**

A job task within an occupation that has been associated with major loss more frequently than others. It could also be a job where an error has the potential for resulting in a major loss.

**critical load**

A load consisting of critical hardware and/or any load that includes personnel.

**critical organ**

(1) *Ionizing Radiation*. The body organ receiving the radionuclides that results in the greatest overall damage to the body. Usually, but not necessarily, it is the organ receiving the greatest concentration. (2) *Toxicology*. The organ in the body which receives the greatest damage as a result of exposure to a health hazard.

**critical path analysis**

See *Critical Path Method*.

**Critical Path Method (CPM)**

The development and use of a networked model containing the times required for different phases of a job, from which the critical path is determined and a decision made as to how the job will be carried out.

**critical pitting temperature**

A value used to compare a material's resistance to pitting corrosion.

**critical point**

The combination of pressure and temperature at which point a gas and liquid become indistinguishable.

**critical pressure**

The pressure required to liquefy a gas at the critical temperature. See also *critical temperature*.

**critical ratio**

The value of the ratio of a deviation from a mean to the standard deviation for that distribution.

**critical score**

That score which appears to separate those most likely to be successful from the most likely to fail.

**critical speed**

Any rotating speed which is associated with high vibration amplitude.

**critical stress intensity factor**

The stress intensity factor at which an unstable fracture occurs.

**critical temperature**

The temperature above which a gas cannot be liquefied by pressure alone. See also *critical pressure*.

**critical value**

That value which lies on a boundary for rejection or acceptance of a hypothesis.

**criticality**

A scale or ranking of the possible types of failures in a system as to the importance of continued functioning of that system.

**crocidolite asbestos**

An amphibole variety of asbestos containing approximately 50% combined silica and nearly 40% combined iron (valence 2/3). This type of asbestos fiber has been considered the most toxic form of asbestos by some health professionals and regulatory agencies. Often referred to as *blue asbestos*.

**Crohn's disease**

Inflammation of the terminal portion of the ileum; also called regional enteritis and regional ileitis.

**cross-auditing**

Audits conducted within a facility but for a different work unit or facility.

**cross-boundary interaction analysis**

A study of the work-related interactions between workers on different tasks to determine the interdependence between tasks.

**cross-collector**

A mechanical sludge collector mechanism, extending the width of one or more longitudinal sedimentation basins, used to consolidate and convey accumulated sludge to a final removal point.

**cross-connection**

A physical connection in a plumbing system through which a potable water supply could be contaminated.

**cross-coupling**

A situation in which an event occurring in one aspect affects or causes an event to occur in another aspect.

**cross (fix) at (altitude)**

Used by Air Traffic Control (ATC) when a specific altitude restriction at a specified fix is required.

**cross (fix) at or above (altitude)**

Used by Air Traffic Control (ATC) when an altitude restriction at a specified fix is required. It does not prohibit the aircraft from crossing the fix at a higher altitude than specified; however, the higher altitude may not be one that will violate a succeeding altitude restriction or altitude assignment.

**cross (fix) at or below (altitude)**

Used by Air Traffic Control (ATC) when a maximum crossing altitude at a specific fix is required. It does not prohibit the aircraft from crossing the fix at a lower altitude; however, it must be at or above the minimum Instrument Flight Rules (IFR) altitude.

**cross grain**

A deviation of the fiber direction in a piece of wood from a line parallel to the sides of the piece. Also referred to as *slope of grain*.

**cross light**

Provide equivalent illumination on a subject using a pair of luminaries arranged at equal angles from the plan generated by the subject and the viewing axis of the viewer or camera.

**cross-modality matching**

A research technique. See *cross-sensory matching*.

**cross protection**

An arrangement to prevent the improper operation of a signal, switch, movable-point frog, or derail as the result of a cross in electrical circuits.

**cross-sectional area**

Exposed area when an object or image is cut perpendicular on its longitudinal axis and viewed along the longitudinal axis.

**cross-sectional design**

A research methodology in which all samples are taken at approximately the same point in time.

**cross-sectional study**

A study using a cross-sectional design.

**cross-sensory matching**

A research technique in which the intensity of stimulation on one modality is compared or

matched to the intensity of stimulation in another modality. Synonymous with *cross-modality matching*.

**cross-sequential design**

A research methodology in which independent groups of individuals from the same birth cohort are measured at different times or ages.

**cross-servicing**

Petroleum products, repairs, supplies, and services provided to General Services Administration (GSA) by other federal agencies, or vice versa. Cross-servicing may also refer to commercial firms where GSA or other federal agencies have agreements with these firms to supply services, repairs, or fuel.

**cross training**

A technique in which a worker may be trained on the job of one or more co-workers, usually with the co-workers being likewise trained.

**crossboard**

*Maritime Navigation.* A simple type of daymark in the shape of a "X" formerly used extensively on the Missouri River only.

**crosscurrent**

Stream flow across navigable portion of river.

**crossed eyes**

An eye condition in which both eyes cannot be focused on the same object at the same time; the result is that one eye focuses on the object, while the other eye is turned away from it. Also called *strabismus*.

**crossflow filtration**

Method of filtration where the feed water flows parallel to the surface of the filter medium.

**crossing**

A place where a channel moves from along one bank of the river over to the other bank of the river.

**crossing daymark**

A diamond-shaped daymark erected at the head and foot of crossings and used by pilots to steer.

**crossing light**

A light located at the head and foot of crossings used by pilots to steer; may be equipped with an additional high intensity directional light.



**crosslinkage**

The degree of bonding of a monomer or set of monomers to form an insoluble, three-dimensional resin matrix.

**crossmatching**

A procedure vital in blood transfusions, testing for agglutination of donor erythrocytes by recipient's serum, and of recipient's red cells by donor serum.

**crossover analysis**

An evaluation for costing purposes of what alternative work methodologies should be used for different production levels.

**crosstalk**

A signal which is communicated to another channel in a system where it is not desired.

**crosstie**

*Railroad.* The transverse member of the track structure to which the rails are fastened. Its function is to provide proper gauge and to cushion, distribute, and transmit the stresses of traffic through the ballast to the roadbed.

**crosstown**

Non-radial bus or rail service which does not enter the Central Business District (CBD).

**crosswind**

*Aviation.* (1) When used concerning the traffic pattern, the word means *crosswind leg*. (2) When used concerning wind conditions, the word means a wind not parallel to the runway or the path of an aircraft.

**crosswind component**

The wind component measured in knots at 90 degrees to the longitudinal axis of the runway.

**crotch**

A location between two structures which emanate from adjacent points and are interconnected by some tissue or other material.

**croup**

A condition resulting from acute obstruction of the larynx caused by allergy, foreign body, infection, or new growth, occurring chiefly in infants and children.

**crow**

See *vertex*.

**crown-rump length, reclining**

The linear horizontal distance from the top of the head to the bottom of the buttocks. Measured with the individual supine on a recumbent length table, the hips flexed 90°, and the head oriented so the Frankfort plane is perpendicular to the board surface.

**CRP**

See *corneo-retinal potential*.

**CRT**

See *cathode ray tube* or *choice reaction time*.

**crude oil**

(1) Unrefined petroleum as produced from underground formations. (2) A mixture of hydrocarbons that exists in the liquid phase in natural underground reservoirs and remains liquid at atmospheric pressure after passing through surface-separating facilities.

**crude oil imports**

The volume of crude oil imported into the 50 states and the District of Columbia, including imports from U.S. territories, but excluding imports of crude oil into the Hawaiian Foreign Trade Zone.

**crude oil petroleum**

A naturally occurring, oily, flammable liquid composed principally of hydrocarbons. Crude oil is occasionally found in springs or pools but usually is drilled from wells beneath the earth's surface.

**crude oil production**

The volume of crude oil produced from oil reservoirs during given periods of time. The amount of such production for a given period is measured as volumes delivered from lease storage tanks (i.e., the point of custody transfer) to pipelines, trucks, or other media for transport to refineries or terminals with adjustments for a) net differences between opening and closing lease inventories, and b) basic sediment and water (BS&W).

**cruise**

Used in an Air Traffic Control (ATC) clearance to authorize a pilot to conduct flight at any altitude from the minimum Instrument Flight Rules (IFR) altitude up to and including the altitude specified in the clearance. The pilot may level off at any intermediate altitude within this block of airspace. Climb/descent within the block is to be made

at the discretion of the pilot. However, once the pilot starts descent and verbally reports leaving an altitude in the block, he may not return to that altitude without additional ATC clearance. Further, it is approval for the pilot to proceed to and make an approach at destination airport and can be used in conjunction with a) an airport clearance limit at locations with a standard special instrument approach procedure. The Federal Aviation Regulations (FAR) require that if an instrument letdown to an airport is necessary, the pilot shall make the letdown in accordance with a standard/special instrument approach procedure for that airport, or b) an airport clearance limit at locations that are within/below/outside controlled airspace and without a standard or special instrument approach procedure. Such a clearance is NOT AUTHORIZATION for the pilot to descend under Instrument Flight Rules (IFR) conditions below the applicable minimum IFR altitude nor does it imply that ATC is exercising control over aircraft in Class G airspace; however, it provides a means for the aircraft to proceed to destination airport, descend, and land in accordance with applicable FAR's governing Visual Flight Rules (VFR) flight operations. Also, this provides search and rescue protection until such time as the IFR flight plan is closed. *See also instrument approach procedure.*

**cruise climb**

A climb technique employed by aircraft, usually at a constant power setting, resulting in an increase of altitude as the aircraft weight decreases.

**cruising**

Proceeding normally, unrestricted, with an absence of drastic rudder or engine changes.

**cruising altitude**

An altitude or right level maintained during en route level flight. This is a constant altitude and should not be confused with a cruise clearance.

**cruising level**

A level maintained during a significant portion of a flight.

**crumb rubber**

Ground or shredded rubber produced by shredding used automobile tires. It can be recycled in asphalt-rubber or other products.

**crush injury**

Any injury in which bodily tissues are severely compressed and possibly torn due to mechanical forces.

**cryesthesia**

Abnormal sensitiveness to cold.

**cryogenic**

Producing low temperatures.

**cryogenic gas**

A liquefied gas that exists in its containers at temperatures far below normal atmospheric temperatures.

**cryogenic liquid**

A refrigerated liquid gas with a boiling point below -130°F (-90°C).

**cryogenics**

The field of science dealing with the behavior of matter at very low temperatures.

**cryosurgery**

The destruction of tissue by application of extreme cold, as in the destruction of lesions in the thalamus for the treatment of Parkinson's disease and the treatment of certain malignant lesions of the skin and mucous membranes. The method has also been used successfully in some types of surgery of the eye, for example, in the removal of cataracts and the repair of retinal detachment.

**cryptosporidiosis**

Gastrointestinal disease caused by the ingestion of waterborne *Cryptosporidium parvum*, often resulting from drinking water contaminated by runoff from pastures or farmland.

**cryptosporidium**

A protozoan parasite that can live in the intestines of humans and animals.

***Cryptosporidium parvum***

A species of *Cryptosporidium* known to be infective in humans.

**cryptotoxic**

Having hidden toxic properties.

**crystal**

A homogenous chemical substance that has a definite geometric shape, with fixed angles between its faces and distinct edges of faces.

**crystalline**

Having a regular molecular structure evidenced by crystals.

**crystallization**

The process of forming crystals.

**crystallizer**

Common term for a forced circulation evaporator.

**CSA**

Canadian Standards Association. *See also compressed spectral array.*

**CSDG**

*See Crash Survival Design Guide.*

**CSF**

*See cerebrospinal fluid. See also cancer slope factors.*

**CSG**

*See constructed solid geometry.*

**CSHO**

*See Compliance Safety and Health Officer.*

**CSO**

*See combined sewer overflow.*

**CSP**

*See Certified Safety Professional.*

**CSTR**

Completely stirred tank reactor.

**CT**

*See charcoal tube.*

**CTAF**

*See common traffic advisory frequency.*

**CTD**

*See cumulative trauma disorder.*

**CTG**

*See control technique guidelines.*

**CTI**

*See Clerical Task Inventory.*

**CTS**

*See carpal tunnel syndrome.*

**cubic feet per minute (cfm)**

A measure of the volume of a substance flowing within a fixed period of time.

**cu. ft**

Cubic foot or cubic feet, ft<sup>3</sup>. Conversion equivalents: 1,728 cubic inches, 60 pints, 8/10 bushel, 0.028 cubic meter, 28.32 liters.

**cubic inch displacement (CID)**

A measure of the physical size of the engine.

**cubic meter (m<sup>3</sup>)**

A volume measurement equal to 1000 L or 264.2 gallons. One cubic meter of water weighs approximately 1 metric ton.

**cuboid bone**

One of the foot tarsus bones, lying between the calcaneus and the lateral two metatarsals. Also referred to as *os cuboideum*.

**cue**

A stimulus which is a signal to respond.

**cul-de-sac**

The round or circular section of the end of a dead-end street.

**culm**

Coal dust or anthracite tailings.

**cultivation**

The propagation of living organisms, applied especially to the growth of microorganisms or other cells in artificial media.

**cultural eutrophication**

Increasing rate at which water bodies "die" by pollution from human activities.

**culture**

(1) The propagation of microorganisms or of living tissue cells in special media conducive to their growth. (2) A growth of microorganisms propagated on or in the medium. (3) The social heritage. The totality of behaviors, values, attitudes, and customs shared by a group.

**culvert**

An enclosed channel serving as a continuation of an open stream where a stream meets a roadway or other barrier.

**cu. m.**

Cubic meter, m<sup>3</sup>.

**cumulative distribution function**

*See cumulative probability distribution.*

**cumulative dose**

*Radiation.* The total dose resulting from repeated exposures to radiation of the same region or of the whole body.

**cumulative error**

An error whose sum dose not converge to zero as the number of samples increases.

**cumulative exposure**

A weighted sum intended to represent an individual's effective exposure to some environmental condition over a period of time

when the levels or intensity of that condition vary throughout the period of interest. Represented by the formula

$$E_c = \sum_{i=1}^n L_i T_i$$

where:

- $L_i$  = level of exposure (intensity, concentration, etc.)  
 $T_i$  = length of time at exposure level  $i$   
 $n$  = number of exposure intervals used

#### **cumulative frequency distribution**

A graphical or tabular representation of an ever increasing curve corresponding to the summation of all scores of a dataset such that for each point on the distribution, the ordinate value represents the sum of all scores less than the corresponding point on the abscissa. See also [cumulative probability distribution](#).

#### **cumulative pathogenesis**

The development of some type of trauma through continued stress on one or more parts of the body.

#### **cumulative probability distribution**

A graphical, mathematical, or tabular representation of the integration or summation of some probability distribution function, yielding the cumulative probability of all events occurring in that set. See also [cumulative frequency distribution](#).

#### **cumulative sum chart**

A statistical quality control chart where the sum of product deviations is plotted against time. Also referred to as *cusum chart*.

#### **cumulative timing**

A work timing technique in which the timing device is permitted to run continuously across all elements of the task being measured. Also referred to as *continuous timing*, *continuous timing method*, *cycle timing*, and *continuous reading method*.

#### **cumulative trauma disorder (CTD)**

A collective term used to describe syndromes characterized by discomfort, impairment, disability, or persistent pain in the joints, muscles, tendons, and other soft tissues, with or without physical manifestations. It is often caused, precipitated, or aggravated by repeti-

tive or forced motions which may occur in many differed occupational activities. Also referred to as *repetitive motion disorder*.

#### **cumulative working level months (CWLM)**

The sum of lifetime exposure to radon working levels expressed in total working level months.

#### **cumulonimbus**

An exceptionally dense and vertically developed cloud, often with a top in the shape of an anvil. The cloud is frequently accompanied by heavy rain showers, lightning, thunder, and sometimes hail. It is also known as a *thunderstorm cloud* or a *thunder head*.



*A developing cumulonimbus cloud*

#### **cumulus**

A cloud in the form of individual, detached domes or towers that are usually dense and well defined. It has a flat base with a bulging upper part that often resembles cauliflower. Cumulus clouds of fair weather are called *cumulus humilis*. Those that exhibit much vertical growth are called *cumulus congestus* or *towering cumulus*.

#### **cumulus stage**

The initial stage in the development of an air mass thunderstorm in which rising, warm, humid air develops into a cumulus cloud.

**cup screen**

A single-entry, double-exit drum screen.

**cupric**

Of or containing copper.

**cupronickel**

See *copper-nickel*.

**cupula**

A gelatinous mass enclosing the sensory hair cells of a crista for detecting motion within the semicircular ducts.

**curb cut**

A section of curb at which a ramp has been laid, usually at an intersection, from the sidewalk to the street for the passage of wheeled vehicles or handicapped individuals.

**curb weight**

The weight of a motor vehicle with standard equipment, maximum capacity of fuel, oil, and coolant: and, if so equipped, air conditioning and additional weight of optional engine. Curb weight does not include the driver.

**curie**

A unit of measure formally defined as a quantity of any radioactive nuclide producing  $3.7 \times 10^{10}$  disintegrations per second. Now the curie (Ci) is officially a unit of activity rather than a quantity (i.e., a unit of radioactivity which is a measure of the rate at which a radioactive material emits particles). The new definition is  $1 \text{ Ci} = 3.7 \times 10^{10}$  disintegrations  $\times \text{s}^{-1}$ . The higher the rate of disintegration, the greater the hazard.

**current**

- (1) The flow of electrons through a conductor.
- (2) See *drift*.

**current assets**

Cash and cash equivalents, as well as current receivables and short-term investments, deposits and inventories.

**current dollars**

(1) The dollar value of a good or service in terms of prices current at the time the good or service is sold. This contrasts with the value of the good or service measured in constant dollars. (2) Represents dollars current at the time designated or at the time of the transaction. In most contexts, the same meaning would be conveyed by the use of the term "dollars."

**current flight plan**

The flight plan, including changes, if any, brought about by subsequent clearances.

**current liabilities**

*Aviation.* Current portion of long-term debt and of capital leases, air travel liabilities, and other short-term trade accounts payable.

**current of traffic**

The movement of trains on a specified track in a designated direction.

**cursor**

A movable symbol, icon, or other element on a display to indicate position or pointing. See also *pointing cursor* and *place-holding cursor*.

**cursor control device**

See *direct manipulation device*.

**curtain wall**

An external wall that is not load bearing. Usually refers to a wall that extends down below the surface of the water to prevent floating objects from entering a screened area.

**curvature**

See *arc*.

**curvature effect**

In cloud physics, as cloud droplets decrease in size, they exhibit a greater surface curvature that causes a more rapid rate of evaporation.

**curve**

A line that is not straight, or that describes part of a circle, especially a line representing varying values in a graph.

**curve fitting**

The process of determining which particular curve/line or function best fits the known data points.

**curvilinear**

Pertaining to one or more lines which are not straight.

**curvilinear correlation**

See *nonlinear correlation*.

**curvilinear regression**

See *nonlinear regression*.

**Cushing's syndrome**

A group of serious symptoms caused by overactivity of the cortices of the adrenal gland. Symptoms include painful, fatty swellings on the body, moonlike fullness of the face, dis-

tention of the abdomen, impairment of sexual function, high blood pressure, and general weakness. There may also be unusual growth of body hair (hirsutism) and streaked purple markings on the body.

**cushion**

Any form of soft material which acts to increase body tactile comfort.

**custom house**

The government office where duties and/or tolls are placed on imports or exports and are paid on vehicles or vessels entered or cleared.

**customs**

Duties, tolls, or taxes imposed by a government on commodities imported into or exported from that country.

**customs house broker**

A person licensed by the Treasury Department to transact business at a custom house on behalf of other persons. *See also broker and freight forwarder.*

**customs tariff**

A schedule of charges assessed by the federal government on imported and/or exported goods.

**cusum chart**

*See cumulative sum chart.*

**cut**

(1) *Editing.* The removal of a selected block of text, data, or graphics from the display for storage in a temporary buffer, for possible recall and placement in another location. (2) *Medical.* A tissue injury of varying depth but with much greater length than width. (3) *Construction.* An excavation of the Earth's surface to provide passage for a road, railway, canal, etc.

**cut her loose**

*Maritime (slang).* To untie all lines.

**cut-in circuit**

*Railroad.* A roadway circuit at the entrance to automatic train stop, train control or cab signal territory by means of which locomotive equipment of the continuous inductive type is actuated so as to be in operative condition.

**cut-section**

*Railroad.* A location other than a signal location where two adjoining track circuits end within a block.

**cut set**

As pertains to fault tree analysis (FTA) and/or the Management Oversight and Risk Tree (MORT), a defined set of events, under the top event, that can be isolated from the remainder of the fault tree and examined as contributory to the occurrence of the top or primary event.

**cutaneous**

Of or relating to the skin, its sensory receptors, or to the sensations produced by those receptors.

**cutaneous lip**

The area between the upper lip and the nose.

**cuticle**

*See eponychium.*

**cutie pie**

A portable instrument used to determine the level of ionizing radiation.

**cutoff**

A cut made by dredging that eliminates a bend in the river or curve. Usually refers to a new channel made by entering at the head of a bend, passing through the cut, and emerging at the end of the bend on the downstream side.

**cutoff frequency**

That frequency at which an electrical filter begins to attenuate a signal. The direction of the attenuation depends on the type of filter.

**cutoff low**

A cold upper-level low that has become displaced out of the basic westerly flow and lies to the south of this flow.

**cutout**

As pertains to systems of over 600 volts (nominal), an assembly of a fuse support with either a fuse holder, fuse carrier, or disconnecting blade. The fuse holder or fuse carrier may include a conducting element (fuse link), or may act as the disconnecting blade by the inclusion of a non-fusible member.

**cutout box**

An enclosure designed for surface mounting and having swinging doors or covers secured directly to, and telescoping with, the walls of the box proper.



**cutting fluid**

An oil-water emulsion that is used for cooling and lubricating the tool and the work in machining and grinding operations.

**cutting oil**

An oil that is used for cooling and lubricating the tool and the work in machining and grinding operations.

**cutting plane**

An imaginary surface along which a computer model is "sliced" to yield a cross-section.

**Cv**

See *coefficient of variation*.

**CVM**

See *contingent valuation survey*.

**CW**

See *continuous wave*.

**CW laser**

Continuous wave laser as opposed to a pulsed type laser.

**CWA**

See *Clean Water Act*. See also *center weather advisory*.

**CWLM**

See *cumulative working level months*.

**CWP**

See *coal miners' pneumoconiosis*.

**cyanate**

A salt of cyanic acid that contains the radical CNO.

**cyanazine**

A common, and potentially carcinogenic, herbicide sometimes found in drinking water.

**cyanhemoglobin**

A compound formed by the action of hydrocyanic acid on hemoglobin, which gives the bright red color to blood.

**cyanic acid**

A highly irritant compound, HOCN.

**cyanide**

A binary compound of cyanogen. Some inorganic compounds, such cyanide salts, potassium cyanide, and sodium cyanide, are important in industry for extracting gold and silver from their ores and in electroplating. Other cyanide compounds are used in the manufacture of synthetic rubber and textiles.

Cyanides are also used in pesticides. Most cyanide compounds are deadly poisons.

**cyanmethemoglobin**

A crystalline, colored substance formed by the action of hydrocyanic acid on oxyhemoglobin at body temperature; used in measuring hemoglobin in the blood.

**cyanoderma**

Blueness of the skin.

**cyanosis**

A bluish discoloration of the skin and mucous membranes due to excessive concentration of reduced hemoglobin in the blood.

**cybernation**

The use of computers in automating industry.

**cybernetics**

The study of communication and automated feedback control functions between living organisms and machined systems with an emphasis on gaining an understanding of living organisms by using machine analogies.

**cyberspace**

An abstract version of a virtual environment which extends beyond three dimensions.

**Cybox dynamometer**

A commercial dynamometer which can measure static or dynamic isokinetic strength.

**cycle**

A succession or recurring series of events. A complete sequence of elements or events making up a unit process or activity in a repetitive, periodic operation.

**cycle life**

The number of times a material can be stressed at a given level before it fails or is expected to fail. See also *fatigue life*.

**cycle per second (cps)**

See *Hertz*. (Note: cps is an outdated term.)

**cycle time**

That time required or used, whether by man or machine, to perform all the elements in a complete work cycle.

**cycle timing**

See *cumulative timing*.

**cyclegram**

See *cyclegraph*.

**cyclegraph**

A photographic record of the motion obtained in cyclegraphy.

**cyclegraph technique**

See *cyclegraphy*.

**cyclegraphy**

The process of making a single photograph using one or more small light bulbs which are on at all times during the process for tracking the body or its parts with an exposure time on the same negative of at least one cycle of a repetitive motion. Typically the subject is in a darkened area. Synonymous with *cyclegraph technique*. See also *chronocyclegraphy*.

**cycles of concentration (COC)**

The ratio of the total dissolved solids concentration in a recirculating water system to the total dissolved solids concentration of the makeup water.

**cyclic**

Pertaining to a periodic event.

**cyclic element**

An element of some operation or process which occurs at least once in every period of that operation or process.

**cyclic timing**

See *cumulative timing*.

**cyclogenesis**

The development or strengthening of extratropical cyclones.

**cyclograph**

See *cyclegraph*.

**cyclone**

An area of low pressure around which the winds blow counterclockwise in the Northern Hemisphere and clockwise in the Southern Hemisphere. Often considered synonymous with tornado, however a tornado is a more compact and generally more destructive phenomenon.

**cyclone collector**

A size selective device which is designed to separate coarse particulates from finer particles. In industrial hygiene sampling, a cyclone is used to separate the respirable fraction of particulates in the sampled air from the total particulates drawn into the cyclone. The respirable particles are col-

lected on a filter positioned downstream from the cyclone.

**cyclonic scale**

See *synoptic scale*.

**cyclotron**

A particle accelerator which uses a magnetic field to confine a positive ion beam while an alternating electric field accelerates the ions in a spiral path.

**cylinder**

(1) A pressure vessel designed for pressures higher than 40 psi and having a circular cross-section. It does not include a portable tank, multi-unit car tank, cargo tank, or tank car. (2) In a reciprocating engine, a cylinder is the chamber in which combustion of fuel occurs and the piston moves, ultimately delivering power to the wheels. Common engine configurations include 4, 6, and 8 cylinders. Generally, the more cylinders a vehicle has, the greater the amount of engine power it has. However, more cylinders often result in less fuel efficiency. See also *engine displacement* and *engine size*.

**cylindrical grip**

A type of grip in which the flexed fingers and the palm are used as if to hold an object of constant diameter with an extended length, where the degree of flexion of each finger joint is similar for each finger.

**cyst**

(1) A sac or capsule containing a liquid or semisolid substance. Most cysts are harmless. Nevertheless they should be removed when possible because they occasionally may change into malignant growths, become infected, or obstruct a gland. There are four main types of cysts: retention cysts, exudation cysts, embryonic cysts, and parasitic cysts. Removal is usually performed by surgical incision, typically preceded by a biopsy to verify the nature and the composition of the cyst (e.g., cancerous, malignant, benign, etc.). (2) A resting stage formed by some bacteria and protozoa in which the whole cell is surrounded by a protective layer.

**cystitis**

Inflammation of the urinary bladder.

**cytogenics**

The branch of genetics devoted to the study of the cellular constituents concerned in heredity, that is, chromosomes. The scientific study of the relationship between chromosomal aberrations and pathological conditions.

**cytologist**

A medical professional who limits his/her practice to cytology.

**cytology**

Study of the function and structure of living cells.

**cytopenia**

A deficiency in the cellular elements of the blood.

**cytoplasm**

The protoplasm of a cell exclusive of the nucleus.

**cytolysis**

Disruption of cells, resulting in the destruction and breakdown of the cell membrane.

**cytotoxin**

(1) An toxic agent that brings about destructive action on certain cells. (2) A toxin or antibody that has a specific toxic action upon cells of special organs. For example, a nephrotoxin would be a toxin that has a specific destructive effect on kidney cells.

**cyturia**

Presence of cells in the urine.

# D

## d'

A statistical index of an individual's sensitivity in estimating the distance between the mean of a noise distribution alone to the mean of the signal plus noise distribution. The units are expressed in standard deviations. Also referred to as *d prime*. See also **signal detection theory**.

## D-weighted noise level

Weighting level on some sound level meters for determining the offensiveness of aircraft noise.

## dacryagogue

(1) Causing a flow of tears. (2) An agent that provokes a flow of tears.

## dacryoadenalgia

Pain in a lachrymal gland.

## dacryoadenitis

Inflammation of a lachrymal gland.

## dacryorrhea

Excessive flow of tears.

## dactylion

(1) Webbing of the fingers or toes. (2) The most distal point of the fleshy part of the middle finger, excluding the nail.

## dactylion height

The vertical distance from the floor to the tip of the middle finger. Measured with the individual standing erect and the arm, hand, and fingers extended downward at the side.

## dactylography

The scientific study of fingerprints as a means of identification.

## dactyloscopy

Examination of fingerprints for the purpose of identification.

## DAF

See **dissolved air flotation**.

## DAFT

Dissolved air flotation thickener.

## daily average flow

The volume of gas that moves through a section of pipe determined by dividing the total annual volume of gas that moves through a

section of pipe by 365 days. Volumes are expressed in million cubic feet per day measured at a pressure of 14.73 psia and a temperature of 60 degrees Fahrenheit. For pipes that operate with bi-directional flow, the volume used in computing the average daily flow rate is the volume associated with the direction of flowing gas on the peak day.

## daily cover

Cover material spread and compacted on the top and side slopes of compacted solid waste at the end of each day to control fire, moisture, and erosion, and to ensure an aesthetic appearance.

## daily living tasks

Those necessary tasks for normal housekeeping, cleanliness around the home. See also **activities of daily living** and **instrumental activities of daily living**.

## daily range of temperature

The difference between the maximum and minimum temperatures for any given day.

## daily vehicle travel

Is the amount of vehicle travel (in thousands) accumulated over a 24-hour day, midnight to midnight, traversed along a "public road" by motorized vehicles, excluding construction equipment or farm tractors. Vehicle travel not occurring on public roads, such as that occurring on private land roads (private roads in parking lots, shopping centers, etc.) must also be excluded.

## DAIR

See **direct altitude and identity readout system**.

## Dakin's solution

An aqueous solution of chlorine compounds of sodium used primarily as a germicide.

## DALR

Dry adiabatic lapse rate. See **adiabatic lapse rate**.

## dalton

A nominal unit of weight equal to that of a single hydrogen atom;  $1 \times 10^{-24}$  grams.

## Dalton's law

The pressure exerted by a mixture of non-reacting gases is equal to the sum of the partial pressures of the separate compounds.

**daltonism**

Red-green color blindness.

**dam**

(1) *General*. A naturally occurring or, more typically, a manmade structure erected in the flow of a waterway to act as a barrier for the purpose of water-retention, flow control, flow restriction, or a combination of these factors (note: certain animals, such as the beaver, are also known to erect dams in the path of waterways). (2) *Medical/Dental*. A sheet of latex rubber used to isolate teeth from fluids of the mouth during dental treatments; used also in surgical procedures to isolate certain tissues or structures.

**dam bulletin board**

A bulletin board located at certain dams to give stage readings and indicate whether to use the lock or go over the dam. "N.P." means use the lock. "P" means go over the dam. Largely obsolete in use since the advent of radio communications.

**dam open**

The situation when the gates are open so as to pass water unimpeded.

**dam warning buoys**

Buoys placed above the face of a dam to warn traffic of danger. These buoys may be of peculiar shape and generally have the word "danger" posted on them.

**dam/weir**

A barrier constructed to control the flow or raise the level of water.

**damage**

(1) *General*. Any loss of material value or usefulness. (2) *Law*. Loss, injury, or deterioration, caused by the negligence, design, or accident of one person to another, with respect to the latter's person or property. The word is to be distinguished from its plural *damages*, which means a compensation in money for a loss or damage. (3) *System Safety*. The partial or total loss of hardware caused by component failure; exposure to heat, fire, or other environments; human errors; or other inadvertent events or conditions.

**damage to person**

The measure of injury (physical, mental, and emotional) resulting from another person's action or omission, whether such action or

omission be intentional or negligent. "Damages" and "injury" are commonly used interchangeably, but they are different to the extent that injury is what is actually suffered while damage is the measure of compensation for such suffering.

**damage to property**

Injury to property and generally does not include conversion of such property or taking of such property by public authority (i.e., eminent domain).

**damage tolerance**

A measure of the ability of structures to retain their load-carrying capability after exposure to sudden loads (for example, ballistic impact).

**damages**

A pecuniary compensation or indemnity, which may be recovered in the courts by any person who has suffered loss, detriment, or injury, whether to his/her person, property, or rights, through the unlawful act or omission or negligence of another. A sum of money awarded to a person injured by the tort of another person. Money compensation sought or awarded as a remedy for a breach of contract or for tortious acts. Damages may be *compensatory* or *punitive* depending on whether they are awarded as the measure of actual loss suffered or as punishment for outrageous conduct and to deter future transgressions. Nominal damages are awarded for the vindication of a right where no real loss or injury can be proved. Generally, punitive or exemplary damages are awarded only if compensatory or actual damages have been sustained. *See also actual damages, benefit-of-the bargain damages, compensatory damages, consequential damages, continuing damages, criminal damage, damages ultra, direct damages, excessive damages, excess liability damages, exemplary (or punitive) damages, expectancy damages, fee damages, foreseeable damages, general damages, hedonic damages, inadequate damages, incidental damages, irreparable damages, land damages, limitation of damages, liquidated damages and penalties, mitigation of damages, necessary damages, nominal damages, pecuniary damages, presumptive damages, prospective damages, proximate damages, remote damages, rescissory damages, severance damages, special damages, speculative*

*damages, statutory damages, substantial damages, temporary damages, treble damages, unliquidated damages, and vindictive damages.*

**damages ultra**

Additional damages claimed by a plaintiff not satisfied with those paid into the court by the defendant. *See also* **damages**.

**damnify**

To cause damage or injurious loss to a person or put him/her in a position where he/she must sustain it. A surety is "damnified" when a judgment has been obtained against him/her,

**damnum absque injuria**

*Latin.* Loss, hurt, or harm without injury in the legal sense; that is, without such breach of duty as is redressible by a legal action. A loss or injury which does not give rise to an action for damages against the person causing it.

**damp**

A noxious gas in a mine. A gaseous mixture formed in a mine by the gradual absorption of the oxygen and the giving-off of carbon dioxide by coal.

**damp location**

*See* **location**.

**damper**

A device used to regulate airflow in ducts, often used to balance airflow in branch ducts. A damper position may be immovable, manually adjustable, or part of an automated control system.

**damping**

Steady diminution of the amplitude of successive vibrations of electric wave or current or sound wave. The dissipation of energy within a dynamic system over time for whatever reason.

**damping factor**

The ratio of actual system damping to critical damping for a system.

**dander**

Scales, dust, and dirt from the fur or feathers of animals that may cause allergic reactions in susceptible persons.

**dandruff**

A scaly material from or on top of the scalp. The condition may spread unless checked and, in rare cases, may extend to the eyebrows,

ears, nose, and neck, causing a reddening of the skin in those areas. Also known as *seborrheic dermatitis*.

**danger**

Term of warning applied to an condition, operation, or situation that has the potential for physical harm to personnel and/or damage to property.

**danger area**

(1) *General.* An area or space, either well defined or not, within the boundaries of which there exists some degree of danger to person, property, or both. The danger, or dangerous conditions, within the area may be due to the presence of known (e.g., recognized) or unknown (e.g., unrecognized) hazards. Danger areas are typically posted as such and entry is usually controlled or prohibited.



*Sample DANGER sign posted to control area access*

(2) *Aviation.* An airspace of defined dimensions within which activities dangerous to the flight of aircraft may exist at specified times. Note: The term "Danger Area" is not used in reference to areas within the United States or any of its possessions or territories.

**danger invites rescue**

Term used in law of torts and, in a limited manner, in law of crimes to describe where liability is borne by one who creates a dangerous condition for one person when another person comes to his/her rescue and is injured. The liability to the second person is founded on this maxim.

**danger signal**

*Maritime Safety.* Four or more short blasts of the boat's or lockmaster's whistle to indicate danger or the need for special caution.



**danger zone**

A physical location in which some type of hazard exists.

**dangerous**

Attended with risk; perilous; hazardous; unsafe.

**dangerous condition**

One in which there exists a substantial and probable risk of injury and/or property damage. The risk may be imminent or merely possible when such a condition exists.

**dangerous criminal**

One convicted of a particularly heinous crime or one who has escaped or tried to escape from penal confinement by use of force of an aggravated character. An armed criminal. Such criminals may be segregated from others in a prison.

**dangerous instrumentality**

Anything which has the inherent capacity to place people in peril, either in itself (e.g., dynamite), or by a careless use of it (e.g., a boat). Due care must be exercised in use to avoid injury to those reasonably expected to be in proximity. In certain cases, absolute liability may be imposed.

**dangerous machine**

A machine is considered "dangerous" in such sense that the employer is required to guard it if, in the ordinary course of human affairs, danger may be reasonably anticipated from its use unless proper protection is provided.

**dangerous occupation**

Term used to describe hazardous work for purposes of worker's compensation laws, as well as in wage and hour determinations, and child labor laws.

**dangerous per se**

A thing that may inflict injury without the immediate application of human aid or instrumentality.

**dangerous place**

One where there is considerable risk, or danger, or peril; one where accidents or injuries are very apt to occur.

**dangerous-tendency test**

Propensity of a person or animal to inflict injury; used in dog bite cases to describe the vicious habits of dogs.

**dangerous weapon**

One dangerous to life; one by the use of which a serious or fatal wound or injury may probably or possibly be inflicted. In the context of criminal possession of a weapon, it can be any article which in circumstances in which it is used, attempted to be used, or threatened to be used, is readily capable of causing death or other serious physical injury. What constitutes a "dangerous weapon" depends not on the nature of the object itself but on its capacity, given manner of its use, to endanger life or inflict great bodily harm. As the manner of use enters into the consideration as well as other circumstances, the question is often one of fact for the jury, but not infrequently one of law for the court.

**dangers of navigation**

See *dangers of the river* and *dangers of the sea*.

**dangers of the river**

This phrase, as used in bills of lading, means only the natural accidents that are incident to river navigation, and does not embrace such as may be avoided by the exercise of that skill, judgment, or foresight which are demanded from persons in a particular occupation. It includes dangers arising from unknown reefs which have suddenly formed in the channel, and are not discoverable by care and skill.

**dangers of the sea**

Refers to those accidents that are peculiar to navigation that are of an extraordinary nature, or arise from irresistible force or overwhelming power, which cannot be guarded against by the ordinary exertions of human skill and prudence.

**darcy**

A unit of measure used to indicate permeability, standardized by the American Petroleum Institute.

**dark**

(1) Having little or less reflected light, as in a dark color. (2) A severely reduced light level in the visual environment, as in a dark room.

**dark adaptation**

The process of undergoing neurochemical changes in the eye after being placed in darkness or low light levels, during which the vis-

ual system becomes more sensitive to light. Also referred to as *scotopic adaptation*.

**dashpot**

A symbol for a viscous damper for mechanical modeling, representing a vane placed within a viscous fluid.

**DAT**

See *Differential Aptitude Test*.

**data**

A formalized representation of numbers or characters which have meaning for communication, interpretation, or processing purposes.

**data bank**

Any location, but typically in a computer system, where large amounts of a specific type of data are stored for retrieval by users.

**data call-in**

A part of the Office of Pesticide Programs, (OPP) process of developing key required test data, especially on the long-term, chronic effects of existing pesticides, in advance of scheduled Registration Standard reviews. Data call-in is an adjunct of the Registration Standards program intended to expedite re-registration and involves the "calling in" of data from manufacturers.

**data category**

Under ISO 14000, classificatory division of the input and output flows from a unit process or product system.

**data display code**

A graphical symbol representing a data point on some type of graphic output.

**data entry**

The process of inputting data into a computer using a pre-established format, regardless of the technique used.

**data inquiry**

The process of requesting and retrieving information from a computer and viewing it on a display or on a hard copy.

**data quality**

Under ISO 14000, the nature or characteristic of collected or integrated data.

**database**

A file of records, or a collection of data containing comparable information on different items and which provides a means for organized information retrieval.

**date of injury**

Means the inception date of the injury and is regarded as coincident with the date of occurrence or happening of the accident which caused the injury.

**datum**

Reference point for elevations of structures and water level.

**daughter products**

Isotopes formed by the radioactive decay of some other isotope.

**Davis-Bacon Act**

Federal law which deals with rate of pay for laborers and mechanics on public buildings and public works (40 U.S.C.A § 256a).

**day in court**

The right and opportunity afforded a person to litigate his/her claims, seek relief, or defend his/her rights in a competent judicial tribunal.

**day-night sound level**

The 24-hour time of day weighted equivalent sound level, in decibels, for any continuous 24-hour period, obtained after addition of ten decibels to sound levels produced in the hours from 10:00 p.m. to 7:00 a.m. It is abbreviated as  $L_{dn}$ .

**day shift**

See *first shift*.

**day tank**

A tank used to store chemicals or diluted polymer solution for 24 hours or less.

**daylight**

That light present during the daytime hours from the sun, or the corresponding artificial illumination in terms of spectrum and intensity.

**daylight availability**

That amount of sunlight received from the sun with reference to certain conditions, such as location, intervening substances, date, and time.

**daylight lamp**

Any artificial light source with an output having a spectrum similar to that of a certain type of daylight. See also *standard illuminant*.

**daymark**

*Maritime Safety*. An unlighted shore aid to navigation, either diamond, square, or triangle shaped.

**daywork**

That work for which compensation is based on time present, not output.

**daywork drilling contract**

A drilling contract under which the drilling contractor is compensated on the basis of the amount of time spent in drilling operations. Essentially, the lease owner hires the drilling rig and its staff to work under his direction. Broad discretion is given to the contracting party to give instructions to the drilling contractor as to how to conduct drilling operations. The courts impose broad liability upon the contracting party as a result of his/her broad discretion.

**dazzle**

Experiencing a condition of extreme brightness due to reflected and scattered light from particles in the atmosphere, resulting in viewing difficulties.

**dB**

See *decibel*.

**dBA**

Refers to decibels measured on the A scale which is a frequency weighting network that approximates the response of the human ear.

**DBA**

Abbreviation for Doing Business As.

**dBb**

Sound level in decibels as determined on the B scale of a sound-level meter.

**dBc**

Sound level in decibels as determined on the C scale of a sound-level meter. The dBc value approximates the overall noise level.

**DBP**

See *disinfection byproducts*.

**D/DBP**

Disinfectants, disinfection byproducts.

**D/DBP Rule**

A U.S. EPA rule to limit the maximum contaminated level of trihalomethanes.

**DBRITE**

See *digital brite radar indicator tower equipment*.

**DBT**

See *dry-bulb temperature*.

**DC**

Abbreviation for direct current. See *direct current*.

**DCS**

See *distributed control system*.

**DDT**

The first chlorinated hydrocarbon insecticide (chemical name: dichloro-diphenyl-trichloro-methane). It has a half-life of fifteen years and can collect in the fatty tissue of certain animals. The EPA banned registration and the interstate sale of DDT for virtually all but emergency uses in the United States in 1972 because of its persistence in the environment and accumulation in the food chain.

**dead axle**

Non-powered rear axle on tandem truck or tractor.

**dead band**

See *dead zone*.

**dead freight**

The amount paid by a charterer for that part of the vessel's capacity which he/she does not occupy although he/she has contracted for it.

**dead front**

Without live parts exposed to a person on the operating side of the equipment.

**dead hands**

See *Raynaud's syndrome*.

**dead heading**

Running empty.

**dead locomotive**

A locomotive other than a control cab locomotive that does not have any traction device supplying traction power; or a control cab locomotive that has a locked and unoccupied cab.

**dead man control**

A device requiring a constant force of a minimum magnitude applied to the device for operating a piece of equipment, and having a default mode which turns off or stops the equipment if that force is not applied.

**dead reckoning**

As applied to flying, the navigation of an airplane solely by means of computations based on airspeed, course, heading, wind direction, speed, groundspeed, and elapsed time.

**dead room**

A room that is characterized by an unusually large amount of sound absorption.

**dead section**

*Railroad.* A section of track, either within a track circuit or between two track circuits, the rails of which are not part of a track circuit.

**dead time**

(1) *Instrumentation.* The interval of time between the instant of introducing a sample into the instrument to the first indication of response. Also referred to as *lag time*. (2) *Radiation.* The time during which a Geiger-Mueller detector is insensitive to incoming radiation.

**dead zone**

That region, usually around the neutral position of a knob, hand controller, or lever, where there is no output from a device, even though an input may be provided.

**deadhead**

(1) *Transportation.* Miles and hours that a vehicle travels when out of revenue service. This includes leaving and returning to the garage, changing routes, etc., and when there is no reasonable expectation of carrying revenue passengers. However, it does not include charter service, school bus service, operator training, maintenance training, etc. For non-scheduled, non-fixed-route service (demand responsive), deadhead mileage also includes the travel between the dispatching point and passenger pickup or drop-off. (2) *Maritime.* Any water-soaked wooden pile, tree, or log that is floating just awash in a nearly vertical position. A menace to small boats and to the propellers of vessels. Also, a tow returning from a trip without barges or with empty barges. (3) *Rail Operations.* Refers to a lone locomotive traveling back to a terminal or yard. *See also* [deadhead transportation](#).

**deadhead transportation**

*Railroad.* Occurs when an employee is traveling at the direction or authorization of the carrier to or from an assignment, or the employee is involved with a means of conveyance furnished by the carrier or compensated for by the carrier.

**deadly force**

The degree of force that may result in the death of the person against whom the force is

applied. Force likely or intended to be used is known to be capable of producing death or great bodily harm.

**deadly weapon**

Any firearm, or other weapon, device, instrument, material, or substance, whether animate or inanimate, which in the manner it is used or is intended to be used is known to be capable of producing death or serious bodily injury. Such weapons or instruments are made and designed for offensive or defensive purpose, or for the destruction of life or the infliction of injury.

**deadman control**

*Railroad.* A pedal, handle, or other form of switch, or combination thereof, that the operator must keep in a depressed or twisted position while a rail vehicle (or train) is moving. If the control is released, the power is cut off and the brakes are applied.

**deadweight tons**

The lifting capacity of a ship expressed in long tons (2,240 lbs.), including cargo, commodities, and crew.

**deaerator**

A device used to remove dissolved gases from solution.

**deaf**

The inability to hear any airborne or bone-conducted sounds due to some defect or damage in the auditory system or the brain. (Note: Many terms that use "deafness" are in reality only hearing reductions.)

**deaf-mute**

A person unable to speak or hear.

**deaf person**

Any person whose hearing is totally impaired or whose hearing is so seriously impaired as to prohibit the person from understanding oral communications when spoken in a normal conversational tone.

**deafened**

Having a loss of hearing ability after normal speech and hearing patterns had been established.

**deafness**

Impairment of hearing. Total deafness is quite rare, but partial deafness is common; an estimated 15 million Americans suffer from

some degree of deafness, and of these, perhaps 2.5 million are children whose defective hearing either is congenital (from birth) or developed before the age of five. The two major types of deafness are *conductive deafness* and *sensorineural (nerve) deafness*. In some cases, both types may be present; this is called *mixed deafness*. In *conductive deafness*, sound vibrations are interrupted in the outer or middle ear before they reach the nerve endings of the inner ear. In the outer ear, a foreign body or an accumulation of cerumen (earwax) may block the external acoustic meatus. These cases generally can be cured by removal of the obstruction. In the middle ear, infections, often entering through a perforated tympanic membrane (eardrum) of the Eustachian tube, may fill the chamber with fluid, hampering the passage of vibrations. The small bones of the middle ear (ossicles) may be damaged by injury or fixed in place by otosclerosis. In sensorineural deafness, the outer and middle ear function normally, but damage to the nerve endings of the inner ear, the cochlear portion of the vestibulocochlear (eight cranial) nerve or the hearing center in the brain causes either interruption or confusion of the sound messages. This damage may be caused by disease, head injury, tumor, excessively loud and sudden noise, or a continuous loud noise. A great many cases of congenital deafness are caused by infectious diseases, especially viral infections, contracted by the mother during pregnancy. Of these, rubella (German measles) is the most common.

**dealkalization**

Any process that removes or reduces alkalinity of water.

**dealkalizer**

Ion exchange unit with a strong anion bed used to reduce bicarbonate alkalinity.

**deamidization**

The liberation of ammonia from an amide.

**deaminase**

A enzyme that promotes the removal of an amino group from a compound.

**dearterialization**

(1) Conversion of arterial blood into venous blood. (2) Interruption of the supply of arterial (oxygenated) blood to an organ or part.

**deashing**

See *demineralizing*.

**death**

The apparent extinction of life, as manifested by the absence of heartbeat and respiration.

**death benefits**

Amount paid under insurance policy on the death of the insured. A payment made by an employer to the beneficiary or beneficiaries of a deceased employee on account of the death of the employee. A death benefit is also provided for under the Social Security Act.

**death rate**

See *mortality rate*.

**death trap**

A structure or situation involving imminent risk of death or a place apparently safe but actually very dangerous to life.

**debarment**

To bar, exclude, or preclude from having or doing something. Exclusion from government contracting and subcontracting.

**debug**

See *burn-in test*.

**debridement**

Removal of all foreign material and aseptic excision of all contaminated and devitalized tissues.

**debris**

Includes any abandoned or dilapidated structure or any sunken vessel or other object that can reasonably be expected to collapse or otherwise enter the navigable waters as drift within a reasonable period.

**decacurie**

A unit of radioactivity, being 10 curies.

**decalcification**

(1) Removal of calcereous matter from tissues.  
(2) The loss of calcium salts from bone or teeth.

**decant**

Separation of a liquid from settled solids by pouring or drawing off the upper layer of liquid after the solids have settled.

**decarbonator**

A device used to remove alkalinity from solution by conversion to CO<sub>2</sub> prior to air stripping.



**decarboxylation**

The removal of the carboxyl group from a compound.

**decay**

(1) The gradual decomposition of dead organic matter. (2) The process or stage of decline; old age and its effects on the mind and body. (3) In radiation, the gradual degradation of a radioisotope. (4) The disintegration of wood substance due to action of wood-destroying fungi. It is also known as *dote* and *rot*.

**decay constant**

The fraction of the number of radioisotope atoms that decay in a unit of time. The decay constant is  $0.693/T$ , where  $T$  is the half-life.

**decay curve**

A graph showing the decreasing radioactivity of a radioactive source as time passes.

**decay product**

A nuclide resulting from the radioactive disintegration of radionuclide or series of radionuclides. A decay product may be stable or radioactive.

**decay, radioactive**

The decrease in activity of any radioactive material with the passage of time, due to the spontaneous emission from the atomic nuclei of either alpha or beta particles, sometimes accompanied by gamma radiation.

**deceleration**

Acceleration in the direction opposite to that of the velocity vector to affect a slowing of motion. Also referred to as *negative acceleration*.

**deception**

The act of deceiving; intentional misleading by falsehood spoken or acted. Synonymous with fraud. Knowingly and willfully making a false statement or representation, express or implied, pertaining to a present or past existing fact.

**decertification**

(1) Process through which a group of employees decides it no longer wants a union to be its bargaining unit. The process involves an election conducted by the National Labor Relations Board. (2) An action conducted by a professional certification board, such as the Board of Certified Safety Professionals, to

intentionally remove a professional certification designation from one of its charges for a temporary or permanent period of time. Such action may be a form of disciplinary action resulting from the some breach of conduct or a delinquency in dues payment on the part of the professional who is subject to the decertification.

**dechlorination**

Removal of chlorine from a substance by chemically replacing it with hydrogen or hydroxide ions in order to detoxify the substances involved.

**deci-**

*Prefix.* One-tenth of a base unit.

**decibel (dB)**

(1) One tenth of a bel. A non-dimensional logarithmic ratio of the measured quantity and a reference quantity for expressing power, pressure, or amplitude. The most common unit of sound or other signal intensity. (2) A means for expressing the logarithmic level of sound intensity, sound power, or sound pressure above an arbitrary reference value of 20 micropascals in air. *See also* *dB(A)*.

**decide**

To arrive at a determination. To "decide" includes the power and right to deliberate, to weigh the reasons for and against, to see which preponderate, and to be governed by that preponderance.

**decigram**

One-tenth of a gram; 1.54 grains.

**deciliter**

One-tenth of a liter; 3.38 fluid ounces.

**decimeter**

One-tenth of a meter; 3.9 inches.

**decipol**

A unit for judging the perceived quality of outdoor air.

**decision**

A determination arrived at after consideration of facts and, in a legal context, law. A popular rather than technical or legal word; a comprehensive term having no fixed, legal meaning. It may be used as referring to ministerial acts as well as to those that are judicial or of a judicial character.



**decision delay**

See *cognitive reaction time*. Also referred to as *decision time*.

**decision height (DH)**

With respect to the operation of aircraft, means the height at which a decision must be made, during an Instrument Landing System (ILS) or Precision Approach Radar (PAR) instrument approach, to either continue the approach or to execute a missed approach.

**decision making**

The process of evaluating information which results in the selection of a course of action.

**decision time**

See *cognitive reaction time*. Also referred to as *decision delay*.

**deck plate**

A horizontal surface designed to provide a person with stable footing for the performance of work such as the connection and disconnection of air and electrical lines, gaining access to permanently mounted equipment or machinery or for similar needs.

**Decker test**

Under the Decker test, an employee of a corporation, though not a member of its control group, is sufficiently identified with the corporation so that his/her communication to the corporation's lawyer is privileged if the employee made the communication at the direction of his/her supervisors and the subject matter pertained to the performance of the employee's normal employment duties.

**declaration**

In common-law pleading, the first of the pleadings on the part of the plaintiff in an action at law, being a formal and methodical specification of the facts and circumstances constituting his/her cause of action.

**declaratory judgment**

Statutory remedy for the determination of a justifiable controversy where the plaintiff is in doubt as to his/her legal rights. A binding adjudication of the rights and status of litigants even though no consequential relief is awarded. Such judgment is conclusive in any subsequent action between the parties.

**declaratory statute**

One enacted for the purpose of removing doubts or putting an end to conflicting deci-

sions in regard to what the law is in relation to a particular matter.

**declination**

A document filed in court by a fiduciary who chooses not to serve in his/her named capacity. At common law, a plea to the courts' jurisdiction on the ground that the judge is personally interested in the suit.

**declining-rate filtration**

Filter operation where the rate of flow through the filter declines and the level of the liquid above the filter bed rises throughout the length of the filter run.

**decoder**

The device used to decipher signals received from Air Traffic Control Radar Beacon System (ATCRBS) transponders to affect their display as select codes. See also *code (5)* and *discrete code*.

**decollement**

*Seismology*. A detachment fault; a fault where crustal deformation causes separation along a boundary of rock types, typically between so-called crystalline "basement" rock and overlying sedimentary rocks.

**decompensation**

The inability of the heart to maintain adequate circulation; it is marked by dyspnea, venous engorgement, cyanosis, and edema.

**decomposition**

The breakdown of dead organic material into smaller or simpler parts that are then recirculated. Bacteria, fungi, heterotrophic protists, and saprophagous insects are important in the process of decomposition.

**decompression**

The return to normal environmental pressure after exposure to greatly increased pressure.

**decompression sickness**

Illness or injury associated with exposure to high-pressure atmospheres followed by rapid exposure to normal pressure. Also known as *the bends* and *caisson disease*.

**decongestant**

(1) Tending to reduce congestion or swelling.  
(2) An agent that reduces congestion or swelling, usually of the nasal membranes. Decongestants may be inhaled, taken as a spray or nose drops, or used orally in liquid or tablet

form. The medication acts by reducing swelling of the nasal passages. Among the leading medications used as decongestants are epinephrine, ephedrine, and phenylephrine. Antihistamines alone or in combination with decongestants may also be effective. A decongestant must be used several times a day to be helpful; but excessive use may cause headaches, dizziness, or other disorders and sometimes the medicine itself may cause reactive nasal swelling.

**decontaminate**

To render safe or harmless by the removal or elimination of poisonous, noxious, or otherwise harmful agents.

**decontamination**

The freeing of a person or an object of some contaminating substance such as radioactive material, chemical compounds, etc.

**decree**

The judgment of a court of equity or chancery, answering for most purposes to the judgment of a court of law.

**decrement**

- (1) A deterioration in some performance measure, *see also performance decrement*.
- (2) A decrease of a counter value in computing.

**decriminalization**

An official act generally accomplished by legislation, in which an act or omission, formerly criminal, is made non-criminal and without punitive sanctions.

**decussation**

The position of one part crossing another, similar part. The point of crossing.

**dedicated**

With regard to systems design, a feature that serves a single function (such as a power source serving a single load).

**dedicated funds**

*Transportation.* Any funds raised specifically for transit purposes and which are dedicated at their source (e.g., sales taxes, gasoline taxes, and property taxes), rather than through an allocation from the pool of general funds.

**dedicated tow**

A single commodity moved from origin to destination by the same towboat without

picking up or dropping off other barges. Often used in the movement of grain, coal, and bulk liquid.

**dedifferentiation**

Regression from a more specialized or complex form to a simpler state.

**deductive reasoning**

The ability to apply general rules to specific problems and arrive at a logical conclusion.

**deep bed filter**

Granular media filter with a sand or anthracite filter bed up to 1.8 meters (6 feet) deep.

**deep pocket**

A person or corporation of substantial wealth and resources from which a claim or judgment may be made.

**deep sea domestic transportation of freight**

Establishments primarily engaged in operating vessels for transportation of freight on the deep seas between ports of the United States, the Panama Canal Zone, Puerto Rico, and United States island possessions or protectorates.

**deep sea transportation of passengers**

Establishments primarily engaged in operating vessels for the transportation of passengers on the deep seas except by ferry.

**deep well injection**

Disposal technique where raw or treated wastes are discharged through a properly designed well into a geological stratum.

**deerfly**

A member of the genus *Chrysops*, an important vector of various organisms. Its bite can cause a large, inflamed, welt-like bump to appear on the surface of the skin. In most cases, this bump may not appear for several hours after the bite. Even in mildly sensitive individuals, there can be intense itching, swelling, and redness around the area of the bite. The bite mark can remain clearly definable on the surface of the skin for three or more weeks, long after the itching sensation has subsided.

**defamation**

An intentional false communication, either published or publicly spoken, that injures another person's reputation or good name. Subjecting a person to ridicule, scorn, or contempt in a respectable and considerable part of the

community; may be criminal as well as civil. Includes both libel and slander.

**defat**

To deprive of fat, as when a solvent contacts the surface of the skin and removes the natural protective oily barrier and renders the skin more susceptible to infection.

**default**

A value, condition, or state which is automatically selected by a computer or other system unless overridden by an operator or program.

**default judgment**

A judgment entered against a party who has failed to defend against a claim that has been brought by another party. Under the Rules of Civil Procedure, when a party against whom a judgment for affirmative relief is sought has failed to plead (i.e., answer) or otherwise defend, he/she is in default and a judgment by default may be entered either by the clerk or the court.

**defecation**

The elimination of wastes and undigested food, as feces, from the rectum.

**defect**

Substandard physical condition, either inherent in the material or created through another action or event.

**defect notification system**

A computerized system that enables the Coast Guard to monitor the efforts of boat and equipment manufacturers in complying with 46 U.S.C. 4310.

**defective**

(1) Imperfect, or lacking in some specified area or some prescribed attribute. (2) A person lacking some physical, mental, or moral quality.

**defective condition**

In product liability law, a product is in a defective condition and considered unreasonably dangerous to the user when it has a propensity for causing physical harm beyond that which would be contemplated by the ordinary user or consumer who purchases it, with the ordinary knowledge common to the foreseeable class of users as to its characteristics. A product is not defective or unreasonably dan-

gerous merely because it is possible to be injured while using it.

**defend**

To prohibit or forbid. To deny. To contest and endeavor to defeat a claim or demand made against one in a court of justice. To oppose, repel, or resist.

**defendant**

The person defending or denying; the party against whom relief or recovery is sought in an action or suit or the accused in a criminal case.

**defense**

(1) *General*. Resistance to or protection from attack. (2) *Law*. That which is offered and alleged by the party proceeded against in an action or suit, as a reason in law or fact why the plaintiff should not recover or establish what he/she seeks. That which is put forward to diminish a plaintiff's cause of action or defeat recovery. Evidence offered by the accused to defeat a criminal charge.

**defense attorney**

A lawyer who files an appearance on behalf of a defendant and represents such in a civil or criminal case.

**defense mechanism**

A psychologic reaction or technique for protection against a stressful environmental situation or against anxiety.

**defense visual flight rules (DVFR)**

Rules applicable to flights within an Air Defense Identification Zone (ADIZ) conducted under the visual flight rules in Federal Aviation Regulation, Part 91.

**defensive response**

*See startle response.*

**defer**

To delay, put off, remand, or otherwise postpone to a future time. The term does not, however, have the same meaning as abolish or omit.

**deferent**

Conducting or progressing away from a center or specific site of reference.

**deferred credits**

Items for which additional information or events are required to determine their ultimate disposition and accounting classification, in-

cluding deferred taxes, deferred investment tax credits, and other suspense items.

**deferred income taxes**

Tax effects which are deferred for allocation to income tax expense of future periods.

**deferred investment tax credits**

Investment tax credits deferred for amortization over the service life of the related equipment.

**defervescence**

The decline of high temperature (fever) to normal.

**defibrillation**

The stoppage of fibrillation of the heart. *See also fibrillation.*

**defibrillator**

An apparatus that counteracts fibrillation by applying electric impulses to the heart and is used successfully in many cases of cardiac resuscitation.

**deficiency**

A lack or shortage; a condition characterized by the presence of less than the normal or necessary supply or competence.

**deficiency disease**

Avitaminosis, or other condition produced by dietary or metabolic deficiency; the term includes beriberi, scurvy, pellagra, etc.

**defined mandatory use service area**

*Transportation.* That listed in the determination of each Fleet Management Center or Fleet Management Subcenter.

**definite sentence**

A sentence calling for imprisonment for a specified number of years, as contrasted with an indeterminate sentence which leaves the duration to the prison authorities (e.g., parole board) and allows for the consideration of the good behavior of the prisoner.

**deflagration**

The thermal decomposition that proceeds at less than sonic velocity and may or may not develop hazardous pressures.

**deflection**

A turning aside. In psychoanalysis, an unconscious diversion of ideas from conscious attention. In the electrocardiogram, a deviation of the curve from the isoelectric baseline, that is, any wave or complex.

**defluxion**

A copious discharge or loss of any kind.

**defoliant**

Under the Federal Insecticide, Fungicide, and Rodenticide Act: Any substance or mixture of substances intended for causing the leaves or foliage to drop from a plant, with or without causing abscission.

**deforestation**

The permanent clearing of forest land and its conversion to non-forest uses.

**deformable element**

Any structure, whether physical or modeled, which is no rigid.

**deformity**

A deformed or misshapen condition; an unnatural growth, or a distorted or misshapen part or member; disfigurement, as a bodily deformity.

**defraud**

To make a misrepresentation of an existing material fact, knowing it to be false or making it recklessly without regard to whether it is true or false. Such statements are made with the specific intent to mislead another person to the point that such misleading is to the advantage of the person making the false statements.

**degasifier**

A device used to remove dissolved gases from a solution, usually by means of an air stripping column.

**degassing**

The release of gases dissolved in hot, molten rock.

**degenerate**

(1) To change from a higher to a lower form. (2) Characterized by degeneration. (3) A person whose moral or physical state is below the normal.

**degradation**

(1) The process by which a chemical is reduced to a less complex form. Conversion of a chemical compound to one less complex by splitting off one or more groups of atoms. (2) A deprivation of dignity; dismissal from rank or office; act or process of degrading. Moral or intellectual decadence; degeneration; deterioration.

**degreaser**

A chemical agent, usually a solvent, that is used to remove grease and oil from machinery. Because these chemicals will also remove the protective layer of oil on human skin, their use without protection can result in dermatitis.

**degree**

(1) The extent, measure, or scope of an action, condition, or relation. (2) The legal extent of guilt or negligence. (3) A title conferred on graduates of school, college, or university. (4) The state of civil condition of a person. (5) A unit of angular displacement;  $1^\circ = 1/360$  of a circle. (6) A unit of temperature, either Fahrenheit, Celsius, or Kelvin/Absolute.

**degree day**

A unit used to estimate heating and cooling costs. For example, on a day when the mean temperature is less than  $65^\circ\text{F}$ , there is the same number of degree days as if the mean temperature of the day is below  $65^\circ\text{F}$ .

**degree of freedom**

(1) The minimum number of independent generalized coordinates required to completely define the positions of all parts of a system at any given time. (2) The number of values which are free to vary within a sample, given specified sampling constraints and experimental design.

**degree of hazard (critical)**

*Aviation.* A situation in which collision avoidance was due to chance rather than an act on the part of the pilot. Less than 100 feet of aircraft separation would be considered "critical."

**degree of hazard (no hazard)**

*Aviation.* A situation in which direction and altitude would have made a midair collision improbable regardless of evasive action taken.

**degree of hazard (potential)**

*Aviation.* An incident which would have resulted in a collision if no action had been taken by either pilot. Closest proximity of less than 500 feet would usually be required in this case.

**degree of proof**

That measure of cogency required to prove a case depending upon the nature of the case. In a criminal case, such proof may be beyond

a reasonable doubt, whereas in most civil cases, such proof is by a fair preponderance of evidence.

**degrees of negligence**

The different grades of negligence which govern the liability of persons (e.g., ordinary negligence as contrasted with gross negligence).

**dehumidifier**

A device for lowering the moisture content of air.

**dehydration**

Removal of water from the body, a tissue, or any material or compound that naturally contains some degree of water; or, the condition that results from undue loss of water. Severe dehydration is a serious condition that may lead to fatal shock, acidosis, and the accumulation of waste products in the body (a condition known as uremia). Water accounts for more than half the body weight. Under normal conditions, a certain amount of fluid is lost daily. About 1.5 liters is removed by urination, and another 90 ml is lost from the digestive tract in the feces. Through vaporization, another liter is given off through the skin and lungs. To make up for these losses, about 2.5 liters of fluid must be taken into the body in food and fluids, and the cells contribute to another 250 ml through chemical activities. When the fluid intake is insufficient or the output is excessive, dehydration occurs.

**dehydrogenase**

An enzyme that catalyzes the transference of hydrogen ions.

**dehydrogenate**

(1) To remove hydrogen from. (2) A compound from which hydrogen has been removed.

**deinking**

The process of removing ink from secondary fibers.

**deionization**

The removal of ions from a compound.

**déjà vu**

*French.* An illusion that a new situation is a repetition of a previous experience.

**delacrimation**

An excessive flow of tears.

**delamination**

The separation of one layer of a material from another.

**delay**

(1) *General*. One of a set of basic work elements which involves some pause or interruption in an ongoing process or activity. (2) *Aviation*. Delays are incurred when any action is taken by a controller that prevents an aircraft from proceeding normally to its destination for an interval of 15 minutes or more. This includes actions to delay departing, en-route, or arriving aircraft as well as actions taken to delay aircraft at departing airports due to conditions en route or at destination airports.

**delay allowance**

(1) A credit of time or money given the operator to compensate for incentive on a specific delay incident not covered by the piece rate or standard. (2) A period of time which is added to the normal time to compensate for contingencies and minor delays beyond the control of the operator. Also referred to as *unavoidable delay allowance*.

**delay indefinite (reason if known) expect further clearance (time)**

Used by Air Traffic Control (ATC) to inform a pilot when an accurate estimate of the delay time and the reason for the delay cannot immediately be determined (e.g., a disabled aircraft on the runway, terminal or center area saturation, weather below landing minimums, etc).

**delay time**

(1) *Industrial Operations*. Any temporal interval during which a worker is idle due to any cause beyond the worker's control, such as a equipment breakdown, a lack of tools or parts, or a shortage of materials. May also be referred to as *waiting time* or *inherent delay*. See also *idle time*. (2) *Railroad*. As applied to an automatic train stop or train control system, the time which elapses after the on-board apparatus detects a more restrictive indication until the brakes start to apply. (3) *Aviation*. The amount of time that the arrival must lose to cross the meter fix at the assigned meter fix time. This is the difference between Actual Calculated Landing Time (ACLT) and Vertex Time of Arrival (VTA).

**delead**

To remove lead from the tissues by use of a chelating agent which is then excreted in the urine. Also, the term applies to the removal of lead-based paint in dwelling units.

**delegate**

A person who is appointed, authorized, delegated, or commissioned to act in the stead of another. The transfer of authority from one to another. A person to whom affairs are committed by another.

**delegated state**

A state (or other governmental entity) which has applied for, and received, authority to administer, within its territory, its state regulatory program as the federal program required under a particular federal statute.

**delegation doctrine**

A principle of constitutional law based upon the classic understanding that Congress, as the duly elected representative of the people, is the repository of all legislative power. Only the people can grant this power to the Congress. According to the delegation doctrine, Congress cannot, in turn, delegate this legislative power to another party, such as an administrative agency, because the agency has not been elected by the people. Under strict application of this doctrine, Congress is required to provide reasonably clear and specific statutory standards to guide agency decision making.

**delegation of powers**

The transfer of authority by one branch of government in which such authority is vested to some other branch or administrative agency. The U.S. Constitution delegates different powers to the executive, legislative, and judicial branches of government. Exercise by the executive branch of the powers delegated to the executive branch offends this separation and the delegation of powers and hence is unconstitutional. Certain powers may not be delegated from one branch of the government to another, such as the judicial powers or such congressional powers as the power to declare war, impeach, or admit new states.

**deleterious**

Refers to an agent (physical, chemical, or microbial) that is injurious or capable of causing harm.



**deliberate**

To weigh, ponder, discuss, regard upon, consider. To examine and consult in order to form an opinion. To weigh in the mind; to consider the reasons for and against; to consider maturely; reflect upon, as to deliberate a question; to weigh the arguments for an against a proposed course of action.

**delinquent**

(1) Lacking in some respect; characterized by antisocial, illegal, or criminal behavior. (2) A person whose conduct is antisocial, illegal, or criminal; applied to a minor exhibiting such conduct (juvenile delinquent).

**deliquescence**

The process of becoming liquid by absorption of water from the air.

**delirium**

A disordered mental state with excitement and illusions. Almost any acute illness accompanied by very high fever can bring on delirium. Other causes are physical and mental shock, exhaustion, fear and anxiety, alcoholism, drug overdose, and insulin shock.

**delirium tremens (DTs)**

Delirium from the excessive, chronic use of alcoholic beverages. It may also occur in cases of addiction to narcotics. Delirium tremens is a serious mental illness that is characterized by illusions and vivid hallucinations, extreme restlessness, agitation, uncontrollable shacking and, in general, an increased body metabolism. The victim is usually extremely fearful and apprehensive because the illusions and hallucinations are very real in his/her mind.

**delist**

Use of the petition process to have a facility's toxic designation rescinded.

**deliverability**

*Refining.* Represents the number of future years during which a pipeline company can meet its annual requirements for its presently certificated delivery capacity from presently committed sources of supply. The availability of gas from these sources of supply shall be governed by the physical capabilities of these sources to deliver gas by the terms of existing gas purchase contracts, and by limitations imposed by state or federal regulatory agencies.

**delivered**

*Refining.* The physical transfer of natural, synthetic, and/or supplemental gas from facilities operated by the responding company to facilities operated by others or to consumers.

**delivered energy**

The amount of energy delivered to the site (building); no adjustment is made for the fuels consumed to produce electricity or district sources. This is also referred to as *net energy*.

**DeLorme boot**

A special boot used to exercise the quadriceps muscles.

**DeLorme exercises**

See *progressive resistance exercises*.

**Delphi method**

See *Delphi technique*.

**Delphi technique**

A process designed to obtain a consensus of experts by successive iterations of questioning interspersed with feedback on others' opinions and supporting reasons. Also referred to as *Delphi method*.

**delta**

(1) The flat alluvial area at the mouth of some rivers where an accumulation of river sediment is deposited in the sea or a lake. (2) Term used to describe the change, or differential, that may be inflicted upon a single variable following the action by some other influencing factor(s).

**delta P**

Differential pressure.

**delta ray**

The track of electrons recoiling from ionizing or atomic reactions in tissue.

**delta rhythm**

An EEG frequency band consisting of frequencies less than 4 Hz.

**delta T**

Differential temperature.

**deltoid arc**

The surface distance from acromiale to the point where the deltoid muscle disappears from view.

**deltoid muscle**

The large skeletal muscle extending over the superior and lateral part of the shoulder.

**deluge shower**

A shower unit which enables the user to have water cascading over the entire body. A minimum flow rate of water and time of use are recommended for effective contaminant removal. *See also emergency shower.*

**delusion**

A false belief inconsistent with an individual's own knowledge and experience.

**demand**

The assertion of a legal right; a legal obligation asserted in the courts. An imperative request preferred by one person to another, under a claim of right, requiring the latter to do or yield something or to abstain from some act.

**demand air taxi**

Use of an aircraft operating under Federal Aviation Regulations, Part 135, passenger and cargo operations, including charter and excluding commuter air carrier.

**demand airline device**

Respirator in which air enters the facepiece only when the wearer inhales.

**demand respirator**

*See demand airline device.*

**demand response**

*Transportation.* (1) Non-fixed-route service utilizing vans or buses with passengers boarding and alighting at pre-arranged times at any location within the system's service area. Also called *dial-a-ride*. (2) Passenger cars, vans, or Class C motor buses operating in response to calls from passengers or their agents to the transit operator, who then dispatches a vehicle to pick the passengers up and transport them to their destinations. A demand response operation is characterized by the following: a) the vehicles do not operate over a fixed route or on a fixed schedule except, perhaps, on a temporary basis to satisfy a special need; and b) typically, the vehicle may be dispatched to pick up several passengers at different pick-up points before taking them to their respective destinations and may even be interrupted en route to these destinations to pick up other passengers. (3) Personal transit service operated on roadways to provide service on demand. Vehicles are normally dispatched and used exclusively for this service.

**demand responsive system**

Any system of transporting individuals, including the provision of designated public transportation service by public entities and the provision of transportation service by private entities, including but not limited to specified public transportation service, which is not a fixed route system.

**demand variability**

A change in the desire to purchase a product over time.

**demand motions inventory**

The various motions which are required to perform a given task.

**demeanor**

With regard to a witness or other person, relates to physical appearance, outward bearing, or behavior. It embraces such facts as the tone of voice in which a witness's statement is made, the hesitation or readiness with which his/her answers are given, the look of the witness, his/her carriage, any evidence of surprise, gestures, zeal, bearing, expression, the use of his/her eyes, any yawning, the pitch of voice, any embarrassment, candor, or seeming levity.

**dementia**

Progressive mental deterioration due to organic disease of the brain. A disorder in which cognitive and intellectual functions of the mind are prominently affected. Impairment of memory is an early sign and total recovery is not possible since organic cerebral disease is involved.

**demineralizing**

The process of removing minerals from water, most commonly through an ion exchange process.

**de minimis doctrine**

*See de minimis non curat lex.*

**de minimis no curat lex**

*Latin.* The law does not care for, or take notice of, very small or trifling matters. The law does not concern itself about trifles. Provision is made under certain criminal statutes for dismissing offenses which are de minimis.

**de minimis settlements**

Under CERCLA, a final settlement between EPA and a company which disposed of relatively small quantities of hazardous substances.

**de minimis violation**

As defined in the Occupational Safety and Health Act of 1970, a violation which has no direct or immediate relationship to safety or health.

**demographics**

The gathering, analysis, and/or use of information such as occupation, income, education, family size, and ethnic background from those populating a certain region.

**demography**

The science dealing with social statistics, including questions of health, disease, births, and mortality.

**demonstrative evidence**

That evidence addressed directly to the sense without intervention of testimony. Such evidence is concerned with real objects which illustrate some verbal testimony and has no probative value in itself.

**demulsify**

To resolve or break an emulsion, such as water and oil, into its components.

**demurrage**

In domestic U.S. transportation, a penalty charge against shippers or consignees for delaying the carrier's equipment beyond the allowed free time provision of the tariff at the rail ramp; in international transportation, a storage charge to shippers which starts accruing after a container is discharged from a vessel. The charge varies according to rules of the appropriate tariff.

**de Musset's sign**

Rhythmic oscillation of the head caused by pulsation of the carotid arteries; a sign of aortic insufficiency.

**demyelination**

The destruction of the myelin sheath of a nerve or nerves.

**dendrite**

A long, branching protoplasmic process, such as the branches conducting impulses toward the body of a nerve cell.

**dendrochronology**

The analysis of the annual growth rings of trees as a means of interpreting past climatic conditions.

**dendron**

One of the branching processes of a nerve cell or neuron that conveys impulse. *See dendrite.*

**dengue**

A viral disease carried by the *Aedes* mosquito. Also known as *breakbone fever* because of the intense joint pain associated with it.

**denial**

A traverse in the pleading of one party of an allegation of fact asserted by the other; a defense. A response by the defendant to matter(s) alleged by the plaintiff in the complaint. Under the Rules of Civil Procedure, denials must be specific and directed at the particular allegations controverted. Denials may be made in part (a *specific denial*) or in whole (a *general denial*), but in the main should be specific and fairly meet the substance of the averments denied.

**denitrification**

The anaerobic biological reduction of nitrate nitrogen to nitrogen gas.

**denitrogenation**

Remove nitrogen from a system, in particular the body, by breathing a nitrogen-free gas mixture.

**dense nonaqueous-phase liquids (DNAPL)**

Liquids that are not miscible in and denser than water.

**densimeter**

An apparatus for determining density or specific gravity.

**densitometry**

Determination of variations in density by comparison with that of another material or with a certain standard.

**density**

The ratio of the mass of a material to its volume expressed as  $\text{g/cm}^3$ ,  $\text{lb/ft}^3$ , etc.

**density current**

A flow of water through a larger body of water that retains its unmixed identity due to a difference in density.

**densography**

The measurement of the contrast densities in a roentgen negative.

**dentifrice**

A preparation for cleaning and polishing the teeth.

**dentistry**

(1) That branch of the healing arts concerned with the teeth and associated structures of the oral cavity. (2) The work done by dentists, e.g., the creation of restorations, crowns and bridges, and surgical procedures performed in and about the oral cavity. (3) The practice of the dental profession collectively.

**denture**

A complement of teeth, either natural or artificial; ordinarily used to designate an artificial replacement for the natural teeth and adjacent tissues.

**denuder**

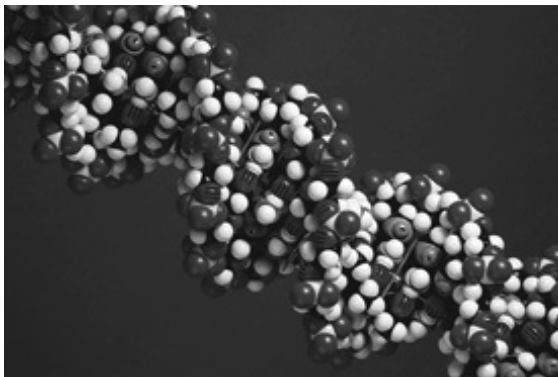
A device used to remove a gaseous contaminant from sampled air when monitoring for a substance(s) with which the denuded material would interface.

**deoxidation**

The process by which oxygen is removed from a chemical compound.

**deoxycholic acid**

One of the bile acids, capable of forming soluble, diffusible complexes with fatty acids, and thereby allowing for their absorption in the small intestine.



*A model of a strand of DNA*

**deoxyribonucleic acid (DNA)**

The type of nucleic acid that contains *deoxyribose sugar* and is found mainly in the chromosomes of animal and vegetable cells. DNA is considered to be the repository of hereditary characteristics and the auto-reproducing constituent of chromosomes and many viruses.

**Department of Defense Standard (MIL-STD)**

A U.S. Department of Defense Standard which uses metric values. *See also Military Standard.*

**Department of Energy (DOE)**

United States federal agency responsible for research and development of energy technology. The DOE provides the framework for a comprehensive and balanced national energy plan through the coordination and administration of the energy functions of the federal government. The Department is responsible for the research, development, and demonstration of energy technology; the marketing of federal power; energy conservation; the nuclear weapons program; regulation of energy production and use; pricing and allocation, and a central energy data collection and analysis program.

**Department of Transportation (DOT)**

Establishes the nation's overall transportation policy. Under its umbrella there are ten administrations whose jurisdictions include highway planning, development and construction; urban mass transit; railroads; aviation; and the safety of waterways, ports, highways, and oil and gas pipelines. The DOT was established by Act of October 15, 1966, as amended (49 U.S.C. 102 and 102 note) "to assure the coordinated, effective administration of the transportation programs of the Federal Government" and to develop "national transportation policies and programs conducive to the provision of fast, safe, efficient, and convenient transportation at the lowest cost consistent therewith."

**departure angle**

*Transit.* The smallest angle, in a plane side view of an automobile, formed by the level surface on which the automobile is standing and a line tangent to the rear tire static-loaded radius arc and touching the underside of the automobile rearward of the rear tire.

**departure center**

The air route traffic control center having jurisdiction for the airspace that generates a flight to the impacted airport.

**departure control**

A function of an approach control facility providing air traffic control service for departing Instrument Flight Rules (IFR) and, under certain conditions, Visual Flight Rules (VFR) aircraft.

**departure time**

The time an aircraft becomes airborne.

**dependence**

The total psychophysical state of an addict in which the usual or increasing doses of the drug are required to prevent the onset of abstinence symptoms.

**dependent variable**

A response variable whose value is determined, wholly or in part, by one or more independent variables within an experimental situation.

**depersonalization**

A feeling of unreality or strangeness, related to oneself or to the external environment.

**depilatory**

Chemical having the ability to remove or destroy hair.

**depleted uranium**

Uranium having a smaller percentage of uranium-235 than that found in uranium as it occurs naturally.

**depletion curve**

In hydraulics, a graphical representation of water depletion from storage-stream channels, surface soil, and groundwater. A depletion curve can be drawn for base flow, direct runoff, or total flow.

**deployment**

The distribution of workers to specific work sites.

**depolarization**

The abolition or disappearance of a difference in electrical charge.

**depolarize**

Reduce the amount of electrical charge across some structure, usually with reference to a neuronal or muscle cell membrane.

**depolymerization**

The breakdown of an organic compound into two or more less complex molecules.

**depose**

To make a deposition; to give evidence in the shape of a deposition; to make statements which are written down and sworn to; to give testimony which is reduced to writing by a duly qualified officer and sworn to by the deponent.

**deposit**

(1) Sediment or dregs. (2) Extraneous inorganic matter collected in the tissues or in an organ of the body.

**deposition**

(1) *Law*. The testimony of a witness taken upon oral questions or written interrogatories. Depositions are not taken in open court, but in response to an order to take testimony issued by a court, or under a general law or court rule on the subject, and reduced to writing. Depositions must be duly authenticated and are intended to be used in preparation and upon the trial of a civil action or a criminal prosecution.

(2) *Meteorology*. A process that occurs in subfreezing air when water vapor changes directly to ice without becoming a liquid first. Also referred to as *sublimation*.

**deposition nuclei**

Tiny particles (ice nuclei) upon which an ice crystal may grow by the process of deposition. Also called *sublimation nuclei*.

**depraved mind**

An inherent deficiency of moral sense and rectitude, equivalent to the statutory phrase "depravity of heart" defined as the highest grade of malice. A corrupt, perverted, or immoral state of mind.

**depreciate**

To spread the cost of a system, piece of equipment, structure, or facility over time, usually for tax or accounting purposes, to allow for its reduction in value.

**depressant**

(1) Depressing or retarding. (2) An agent that retards any function, especially a drug that slows a function of the body or calms and quiets nervous excitement; a sedative. Among the best-known depressants are barbiturates. Alcohol is also a depressant, although its first effect is sometimes stimulating.

**depression**

(1) A hollow or fossa. (2) Reduction of vital functional activity; in psychiatry, a morbid sadness or melancholy, distinguished from grief, which is realistic and proportionate to a personal loss. Depression may be symptomatic of a psychiatric disorder or it may constitute the principal manifestation of a neurosis or psychosis. (3) A period of economic stress; usually accompanied by poor business conditions and high unemployment.

**depressive reaction**

A mental or emotional condition, precipitated by some external factor and manifested by

guilt, self-depreciation, psychomotor retardation, defection, and/or a sense of inadequacy. It is generally considered to be a neurosis.

**depressor**

(1) Any muscle producing a downward movement. (2) Any device effecting a downward movement of some structure.

**depressurization**

A condition that occurs when the air pressure inside a structure is lower than the air pressure outside. Depressurization can occur when household appliances, such as fireplaces or furnaces, consume or exhaust house air and are not supplied with enough makeup air. Radon-containing soil gas may be drawn into a house more rapidly under depressurization conditions.

**depth**

A straight-line measurement with anterior to posterior extent in any sagittal plane and perpendicular to the frontal plane of the body.

**depth cueing**

The process of making a complicated image more readily understandable by distinguishing between elements in the foreground and background.

**depth filtration**

Filtration classification for filters where solids are removed within the granular media.

**depth of field**

The distance from the lens of a camera to the farthest subject (infinity) in which the image will appear sharp. "Shallow" depth of field is a result of larger apertures; greater depth of field is achieved when smaller aperture openings are used.

**depth perception**

The ability to distinguish relative distances of two or more objects or the distance of a single object from the observer.

**deputy**

A substitute; a person duly authorized by an officer to exercise some or all of the functions pertaining to the office, in the place and stead of the latter.

**DeQuervain's disease**

A type of tenosynovitis of the exterior tendons of the wrist or abductors of the thumb.

The inflammation of the synovial lining is often pronounced under conditions of highly repetitive hand usage or is due to poor design of the workplace or tools. *See also [cumulative trauma disorder](#).*

**derailment**

A derailment occurs when one or more than one unit of rolling stock equipment leaves the rails during train operations for a cause other than collision, explosion, or fire.

**derailment/bus going off road**

A non-collision incident which occurs as a result of rolling equipment leaving the rail, or buses leaving the roadway, and for rollovers.

**derailment/left roadway**

A non-collision incident in which a transit vehicle leaves the rails or road on which it travels. This also includes rollovers.

**deregulation**

Revisions or complete elimination of economic regulations controlling transportation. For example, the Motor Carrier Act of 1980 and the Staggers Act of 1980 revised the economic controls over motor carriers and railroads, respectively.

**derepression**

In psychiatry, the coming back of ideas or impulses into conscious awareness that were earlier pushed from such awareness into the unconscious because they were personally intolerable.

**derivative**

A chemical substance derived from another substance either directly or by modification or partial substitution.

**derived from rule**

Under RCRA, this special rule stipulates that waste generated from the treatment, storage, or disposal of hazardous waste is itself a hazardous waste, unless it does not exhibit any of the hazardous characteristics or it is not a listed waste.

**derived requirement**

A requirement not imposed by some original or high-level document or management, but which is imposed by secondary documents or lower levels of management.



**dermabrasion**

Removal, by sandpaper or high-speed brush, of acne scars or nevi.

**dermal**

Relating to the skin.

**dermal toxicity**

The ability of a pesticide or toxic chemical to poison people or animals by contact with the skin. See also [contact pesticide](#).

**dermatitis**

Any inflammation of the skin surface from any cause. A skin abnormality resulting from an occupational exposure. Dermatitis can result from various animal, vegetable, and chemical substances, from heat or cold, from mechanical irritation, from certain forms of malnutrition, or from infectious disease. In some cases, dermatitis may have a psychologic rather than a physical cause. The symptoms may include itching, redness, crustiness, blisters, watery discharges, fissures, or other changes in the normal condition of the skin. May also be referred to as *industrial dermatitis*, *occupational contact dermatitis*, *professional eczema*, *cement dermatitis*, *chrome ulcers*, *oil acne*, *rubber itch*, or *tar warts*.

**dermatology**

That branch of medicine dealing with diseases of the skin.

**dermatome**

That region of the skin innervated with sensory fibers from a single spinal nerve.

**dermatome chart**

A graphic or visual display of the regions of the body surface innervated by specific spinal nerves.

**dermatomyositis**

An acute, subacute, or chronic disease involving constant inflammation of the skin and muscles, leading to muscular decomposition and atrophy. It is included among the group of illnesses known as collagen diseases. Among the variety of symptoms that point to the onset of the disease are fever, loss of weight, skin lesions, and aching muscles. As the disease progresses, there may be loss of the use of the arms and legs. Complications such as hardening may occur, similar to the changes seen in *scleroderma*.

**dermatophytoses**

A group of diseases caused by fungi and often found among farmers, animals handlers, pet and hide handlers, wool sorters, cattle ranchers, athletes, lifeguards, gymnasium employees, and animal laboratory workers. Ringworm of the hands and feet is the most common form and is usually prevented by recognition of the disease in animals, sterilization and proper laundering of towels, general cleanliness of showering facilities, and proper personal hygiene.

**dermatosis**

Generic term for skin disorders, particularly those not involving inflammation.

**dermis**

See [corium](#).

**dermographic pencil**

An instrument for marking landmarks or point marks on skin for taking anthropometric measurements.

**derrick**

A mechanical device intended for lifting, with or without a boom supported at its head by a topping lift from a mast, fixed A frame, or similar structure. The mast or equivalent member may or may not be supported by guys or braces. The boom, where fitted, may or may not be controlled in the horizontal plane by guys (vangs). The term also includes shear legs.

**DES**

Diethylstilbestrol, a synthetic estrogen, is used as a growth stimulant in food animals. Residues in meat are thought to be carcinogenic.

**desalinization**

Removing salt from ocean or brackish water.

**Descemet's membrane**

The posterior lining membrane of the cornea.

**descent speed adjustments**

*Aviation.* Speed deceleration calculations made to determine an accurate vertex time of arrival (VTA). These calculations start at the transition point and use arrival speed segments to the vertex.

**describing function**

Any mathematical model or representation of a time-varying system involving humans,

generally consisting of some transfer function plus remnants.

**descriptive statistics**

The collection, tabulation, and analysis of data in such a manner as to yield measures, (i.e., mean, variance, standard deviation, etc.) that describe the population, group, or sample data.

**desensitization**

The abolition of sensitivity to a particular antigen.

**desensitize**

To render less sensitive.

**desert**

A region characterized by a climatic pattern where evaporation exceeds precipitation.

**desert fever**

A fungal disease usually affecting the respiratory tract and lungs, although it may involve any or all of the body's organs; also called *San Joaquin Valley fever*, *desert rheumatism* and *coccidioidomycosis*.

**desert pavement**

An arrangement of pebbles and large stones that remains behind as finer dust and sand particles are blown away by the wind.

**desert rheumatism**

See *desert fever*.

**desertification**

The process where the biological productivity of land is reduced, resulting in desert-like conditions.

**desiccant**

(1) *General*. Chemicals, such as silica gel, that absorb moisture and are typically used to promote or ensure dryness. (2) Under the Federal Insecticide, Fungicide, and Rodenticide Act: Any substance or mixture of substances intended for artificially accelerating the drying of plant tissue.

**design**

The process of developing the requirements, structure, dimensions, tolerances, and materials to be used for an entity.

**design burst pressure**

The calculated pressure (the analytical value that was calculated using an acceptable industry and/or government practice to determine its design pressure) that components

must withstand without rupture and/or burst to demonstrate design adequacy in a qualification test. The actual burst pressure for a tested component must demonstrate, during qualification testing, that the design burst pressure is less than the actual burst pressure. Safety factors are based on design burst pressure not actual burst pressure of a particular component.

**design capacity**

*Pipeline*. The capacity associated with the direction of the flow observed on the peak day. See also *certified capacity*.

**design driver**

A requirement which causes a system to be designed in a specific way.

**design eye point**

A fixed point providing a line of sight within which all controls and displays at a workstation should be located. This point is only recommended for use when the head position of the operator is severely constrained during the task or job. See also *design eye volume*.

**design eye position**

See *design eye volume*.

**design eye volume**

That region within which an operator's head is free to move and provide appropriate lines of sight at a workstation.

**design for maintenance**

A design priority concept which emphasizes the future maintenance aspects of a product's structure. Also referred to as *design for maintainability*.

**design for manufacturing**

A design priority concept which emphasizes the assembly aspects of manufacturing in structural design.

**design for reliability**

A design priority which emphasizes minimizing the chances of failure and/or maximizing the mean time between failures.

**design for use**

A design priority which emphasizes the ease of use of a product.

**design head**

*Hydroelectric Engineering*. The achieved river, pond, or reservoir surface height (forebay elevation) that provides the water level to

produce the full flow at the gate of the turbine in order to attain the manufacturer's installed nameplate rating for generation capacity.

**design live road**

*Transit.* The live road that the structure was designed to carry (85 psf, H-10, H-15, and HS-20).

**design load**

The weight which can be safely supported by a structure, as specified in its design criteria.

**design safety factor**

A factor used to account for uncertainties in material properties and analysis procedures. It is often referred to as *design factor of safety*, or simply *safety factor*.

**design solution**

An engineering design which meets or exceeds a set of requirements.

**design speed**

(1) *General.* That rate at which a mechanically driven operation is intended to occur or at which a piece of equipment is intended to move or rotate. (2) *Transit.* Design speed determines the maximum degree of road curvature and minimum safe stopping, meeting, passing, or intersection sight distance.

**designated associated equipment**

*Maritime.* Inboard engine, outboard engine, and stern drive unit. Specific equipment, in addition to completed boats, which has been designated in 33 (CFR) 179.03 as being subject to the requirements of 46 (U.S.C.) 4310. Other items of associated equipment may be the cause for recall of boats, but the manufacturers of those items of associated equipment are not subject to the requirement for recall.

**designated facility**

A hazardous waste treatment, storage, or disposal facility that has been designated on the manifest by the generator.

**designated pollutant**

An air pollutant which is neither a criteria nor hazardous pollutant, as described in the Clean Air Act, but for which new source performance standards exist. The Clean Air Act does require states to control these pollutants, which include acid mists, total reduced sulfur (TRS), and fluorides.

**designated public transportation**

Transportation provided by a public entity (other than public school transportation) by bus, rail, or other conveyance (other than transportation by aircraft or intercity or commuter rail transportation) that provides the general public with general or special service, including charter service, on a regular and continuing basis.

**designated representative**

Any person or party acting on behalf of an employee with the full permission of that employee. Can include labor unions, relatives, and attorneys. Under certain circumstances, designated representatives may have access to employee exposure and medical records.

**designated seating capacity**

*Transportation.* The number of designated seating positions provided.

**designated seating position**

Any plan view location capable of accommodating a person at least as large as a 5th percentile adult female, if the overall seat configuration and design and vehicle design are such that the position is likely to be used as a seating position while the vehicle is in motion, except for auxiliary seating accommodations such as temporary or folding jump seats. Any bench or split-bench seat in a passenger car, truck, or multipurpose passenger vehicle with a Gross Vehicle Weight Rating (GVWR) less than 10,000 pounds, having greater than 50 inches of hip room (measured in accordance with Society of Automotive Engineers (SAE) Standard J1100a) shall have not less than three designated seating positions, unless the seat design or vehicle design is such that the center position cannot be used for seating.

**designated service**

*Railroad.* Exclusive operation of a locomotive under the following conditions: a) the locomotive is not used as an independent unit or the controlling unit is a consist of locomotives except when moving for the purpose of servicing or repair within a single yard area; b) the locomotive is not occupied by operating or deadhead crews outside a single yard area; and c) the locomotive is stenciled "Designated Service-DO NOT OCCUPY."

**designated uses**

Those water uses identified in state water quality standards which must be achieved and maintained as required under the Clean Water Act. Uses can include cold water fisheries, public water supply, agriculture, etc.

**designer bugs**

Popular term for microbes developed through biotechnology that can degrade specific toxic chemicals at their source in toxic waste dumps or in groundwater.

**desmalgia**

Pain in a ligament.

**desorption**

The process of removing an adsorbed material from the solid in which it is adsorbed and retained.

**desorption efficiency**

The fraction of a known quantity of analyte that is recovered from a spiked solid sorbent media blank.

**desquamation**

The sloughing off of the epidermal layer of the skin.

**destabilizing pressure**

A pressure that produces comprehensive stresses in a pressurized structure or pressure component.

**destination**

(1) For travel period trips, the destination is the farthest point of travel from the point of origin of a trip of 75 miles or more one way. For travel day trips, the destination is the point at which there is a break in travel. (2) The place/location in which the cargo was unloaded and/or the transit terminated.

**destruction and removal efficiency (DRE)**

An expression of hazardous waste incinerator efficiency stated as the percentage of incoming principal organic hazardous components destroyed during incineration.

**destructive test**

A procedure in testing product quality in which the material or product being tested is either partially or totally destroyed.

**desulfurization**

Removal of sulfur from fossil fuels to reduce pollution.

**desynchronize**

(1) Change the electroencephalogram from a low frequency, high amplitude rhythm to a higher frequency, lower amplitude rhythm. (2) Change a biological rhythm from a normal or typical phase relationship to another.

**desynchronization**

See *jet lag*.

**detachment of the retina**

Separation of the inner layers of the retina from the pigment layer, which remains attached to the choroid. The onset of symptoms may be gradual or sudden, depending on the cause, size, and location of the area involved. The victim may see flashes of light and then days or weeks later notice cloudy vision or the loss of central vision. Another common symptom is the sensation of spots or moving particles in the field of vision. In severe retinal detachment, there may be complete loss of vision.

**detectability**

One or more qualities of a signal, display, or other stimulus which affect its probability of being perceived, either in isolation or against a background.

**detection limit**

The lowest amount that can be distinguished from the normal electronic noise of an analytical instrument. For Hazardous Ranking System purposes, the detection limit used is the method detection limit (MDL) or, for real-time field instruments, the detection limit of the instrument as used in the field.

**detection threshold**

See *threshold*.

**detector**

(1) *General*. The portion of an instrument that is responsive to the material being measured. (2) *Radiation*. A device which converts ionizing radiation energy to a form more amenable to measurement. For example, an ionization detector, scintillation detector, etc.

**detector tube**

An air sampling device used to measure the concentration of various air contaminants. Consists of a glass tube filled with a solid chemical that changes color when it reacts with the air contaminant being sampled in combination with a hand-held pump device to

draw air through the tube at a measured rate. Also known as *colorimetric tube*.

**detent**

A releasable element used to restrain a part before or after its motion; detents are common arming mechanisms. For example, safe and arm (S&A) device safing pins use a spring-loaded detent to secure the pin in the device.

**detention time**

The period of time that a volume of liquid remains in a tank.

**detergent**

Synthetic washing agent that helps to remove dirt and oil. Some contain compounds which kill useful bacteria and encourage algae growth when they are in wastewater that reaches receiving waters.

**deterioration**

(1) The process or state of growing worse. (2) Disintegration or wearing away. (3) With regard to a commodity, consists of a constitutional hurt or impairment, involving some degeneration in the substance of the thing, such as that arising from decay, corrosion, or disintegration. With respect to values or prices, a decline.

**determinate errors**

Errors which occur that are correctable if their cause can be determined.

**determination**

*Transit.* A document signed by the Administrator of the General Services Administration, setting forth the decision to establish an Interagency Fleet Management Center at a specific location.

**determinism**

The doctrine that the will is not free but is absolutely determined by psychic and physical conditions.

**deterministic**

Pertaining to those data which can be explained or predicted with reasonable accuracy via some explicit solvable mathematical relationship.

**detonating cord**

A flexible fabric tube containing a filler of high explosive material intended to be initiated by an electroexplosive device; often used in destruction and separation functions.

**detonation**

An exothermic chemical reaction that propagates with such rapidity that the rate of advance of the reaction zone into the unreacted material exceeds the velocity of sound. The rate of advance of the reaction zone is termed *detonation velocity*. When this rate of advance attains such a value that it will continue without diminution through the unreacted material, it is termed the *stable detonation velocity*. When the detonation velocity is equal to or greater than the stable detonation velocity of the explosive, the reaction is termed a *high-order detonation*; when it is lower, the reaction is termed a *low-order detonation*.

**detonation velocity**

See *detonation*.

**detonator**

An explosive device (usually an electroexplosive device) that is the first device in the explosive train and is designed to transform an input (usually electrical) into an explosive reaction.

**detoxification**

The destruction of toxic properties of a substance, a major function of the liver.

**detresfa**

Distress Phase. The code word used to designate an emergency phase wherein there is reasonable certainty that an aircraft and its occupants are threatened by grave and imminent danger or require immediate assistance.

**detrimental deformation**

Term used to indicate a type of deformation including all structural deformations, deflections, or displacements that prevent any portion of the structure from performing its intended function or that reduce the probability of successful completion of the mission.

**detritus**

(1) Decaying organic matter such as root hairs, stems, and leaves usually found on the bottom of a water body. (2) Grit or fragments of rock or minerals.

**detritus tank**

Square tank grit chamber incorporating a revolving rake to scrape settled grit to a sump for removal.

**deutan**

A person with anomalous color vision, marked by derangement or loss of the red-green sensory mechanism.

**deuteranomaly**

A color vision deficiency involving a reduced ability to discriminate green in colors.

**deuteranopia**

A form of color blindness involving an inability to discriminate the green content of colors. Also referred to as *green-blindness*.

**deuterium**

The mass two isotope of hydrogen, symbol  $^2\text{H}$  or D; it is available as a gas or heavy water (deuterium oxide) and is used as a tracer or indicator in studying fat and amino acid metabolism.

**deuteron**

The nucleus of a deuterium atom.

**devanning**

The unloading of a container or cargo van.

**developer**

A person, government unit, or company that proposes to build a hazardous waste treatment, storage, or disposal facility.

**development**

(1) *General*. Gradual growth or expansion, especially from a lower to a higher stage of complexity. (2) Under the Federal Antarctic Protection Act of 1990: Any activity, including logistic support, which takes place following exploration, the purpose of which is the exploitation of specific mineral resource deposits, including processing, storage, and transport activities.

**development test**

A test to provide design information that may be used to check the validity of analytic technique and assumed design parameters, to uncover unexpected system response characteristics, to evaluate design changes, to determine interface compatibility, to prove qualification and acceptance procedures and techniques, or to establish acceptance and rejection criteria.

**development time**

The temporal period required to design, engineer, and prepare the manufacturing documentation for some device.

**developmental age**

An index of growth using an age equivalent determined by standardized observations. May include body measures, mental, emotional, social, and mental observations. *See also* **chronological age** and **mental age**.

**developmental anthropometry**

The study of growth in size and/or proportions of the human body.

**developmental quotient**

The value of the ratio of the developmental age and the chronological age.

**developmental RfD**

An estimate (with uncertainty spanning perhaps an order of magnitude or greater) of an exposure level for the human population, including sensitive subpopulations, that is likely to be without an appreciable risk of developmental effects. Developmental RfDs are used to evaluate the effects of a single event (generally one day) exposure.

**developmental toxic effect**

Harmful effect to the embryo, or fetus, such as embryotoxicity, fetotoxicity, or teratogenicity.

**deviant**

(1) Varying from a determinable standard. (2) A person with characteristics varying from what is considered standard or normal.

**deviation**

(1) An alternate method of compliance with the intent of specific requirements. A departure from established or usual conduct or ideology. (2) The amount by which a score or other measure differs from the mean, or other descriptive statistic. (3) *Aviation*. a) A departure from a current clearance, such as an off-course maneuver to avoid weather or turbulence. b) Where specifically authorized in the FARs and requested by the pilot, Air Traffic Control (ATC) may permit pilots to deviate from certain regulations.

**device**

(1) According to the Federal Food, Drug, and Cosmetic Act, an instrument, apparatus, implement, machine, contrivance, implant, *in vitro* reagent, or other similar or related article, including any component, part or accessory, which is a) recognized in the official National Formulary, or the United States



Pharmacopoeia, or any supplement to them; b) intended for use in the diagnosis of disease or other conditions, or in the cure, mitigation, treatment or prevention of disease, in man or other animals; or c) intended to affect the structure of any function of the body of man or other animals and which does not achieve its primary intended purposes through chemical action within or on the body of man or other animals and which is not dependent upon being metabolized for the achievement of its primary intended purposes. (2) A unit of an electrical system which is intended to carry but not utilize electric energy.

**device driver**

See *driver*.

**device-independent**

An operation or procedure which has similar functions may be executed or performed on a variety of pieces of equipment which may differ in structure, method of operation, and/or appearance.

**dew**

Water droplets that form on cool surfaces following condensation of atmospheric water vapor.

**dew point**

The temperature at which air at a constant pressure and constant water-vapor content will be saturated. Cooling below the dew point usually results in frost or dew. When this temperature is below 0°C, it is sometimes called the *frost point*.

**dexterity**

The degree of manipulative ability via perceptual-motor coordination.

**dextrality**

Preferring the right-hand over the left.

**dextrose**

A sugar, also called glucose or grape sugar, containing six carbon atoms. Dextrose is considered one of the most important carbohydrates because it makes up 80% of all simple sugar absorbed into the blood. It is present in the juice of many sweet fruits and in the blood of all animals. Through the process of metabolism, dextrose is used by the body to provide energy or, in excess, it is converted to fat. The liver cells convert glucose to glycogen, so that it can be stored until needed.

When the blood sugar drops below normal, there is increased production of epinephrine, which causes glycogen to be changed back into glucose and used for the production of energy.

**DF**

See *direction finder*.

**DFT**

See *dry film thickness*.

**DH**

See *decision height*.

**DHEW**

Department of Health, Education, and Welfare (United States).

**diabetes**

Inordinate and persistent increase in the urinary secretions, especially diabetes mellitus.

**diabetes insipidus**

A metabolic disorder resulting from decreased activity of the posterior lobe of the pituitary gland. Re-absorption of water from the renal tubules is promoted by vasopressin, or antidiuretic hormone, a hormone from the posterior pituitary lobe. A deficiency of this hormone leads to the symptoms of diabetes insipidus which include excessive thirst and the passage of large amounts of urine with no excess of sugar.

**diabetes mellitus**

A disorder of carbohydrate metabolism in which the ability to oxidize and utilize carbohydrates is lost as a result of disturbances in the normal insulin mechanism. A serious disruption of carbohydrate metabolism leads to abnormalities of protein and fat metabolism. The oxidation of fat is accelerated in diabetes, and thus there is an accumulation of the end products of fat metabolism in the blood and the development of the symptoms of ketosis, acidosis, and coma. Factors leading to disturbances in the normal insulin mechanism and the onset of diabetes mellitus include insufficient production of insulin from the beta cells of the islands of Langerhans in the pancreas, an increase in the insulin requirement by the tissue cells, or a decrease in the effectiveness of insulin due to one or more insulin antagonists which can deactivate insulin. Any of these factors can produce the symptoms of diabetes mellitus. Because diabetics are un-

able to utilize the carbohydrates in their blood, they are improperly nourished no matter how much food they consume. The accumulation of unused glucose leads to weakness, fatigue, and a spilling over of sugar into the urine. The high levels of sugar in the blood make the diabetic particularly susceptible to infection. In a prolonged severe diabetic condition, the raised fat and glucose level of the blood may cause damage to blood vessels and to tissues and organs containing blood vessels. The resulting poor circulation may be a factor leading to other complications such as gangrene of the hands or feet. Also, the heart and kidneys may suffer damage, there can be difficulty with vision (up to and including total blindness), or the nervous system may be affected. *See also insulin.*

**diagnose**

To isolate or recognize a disease or the cause of an illness.

**diagnosis**

The art or method of identifying or recognizing a disease. A medical term, meaning the discovery of the source of a patient's illness or the determination of the nature of his/her disease from a study of its symptoms.

**Diagnostic Rhyme Test**

A forced-choice test in which an individual is required to select the word he/she believes was spoken from two rhyming options.

**diagnostic study**

A preliminary investigation or study of some operation, process, individual, or group in an attempt to learn the causes of problems. May also be referred to as a *diagnostic survey*.

**diagnostic survey**

*See diagnostic study.*

**diagram**

A geometric drawing used to explain a fact, a process, the sequence of an activity, or the composition of an element as associated with an accident or incident.

**dial caliper**

A caliper which uses a rotary dial to indicate the distance between two points.

**dial-a-ride**

*See demand response.*

**dial up access terminal (DUAT)**

The capability for direct user access terminals to file flight plans into the National Airspace System (NAS) and access weather information from the National Graphic Weather Display System.

**dialogue**

The content of a structured sequence of steps in an interaction between a user and a computer.

**dialogue box**

A pop-up display window which requests user input regarding some computer system function.

**dialysis**

The passage of solute molecules through a semipermeable membrane from higher concentration to a solution of lower concentration.

**diameter**

The length of a straight line passing through the center of a circle and connecting the opposite points on its circumference; hence the distance between two specified opposite points on the periphery of a structure.

**diamide**

A double amide

**diamine**

A double amine.

**diaphragm**

(1) In anatomy, the musculomembranous partition separating the abdominal and thoracic cavities that plays an important role in the respiration process. (2) A thin septum dividing a cavity. (3) A disk with a fixed or flexible opening, mounted in relation to a lens, by which part of the light may be excluded from the area.

**diaphysis**

The shaft or central portion of a long bone.

**diarrhea**

Fecal discharge of an abnormal frequency and liquidity. A condition often associated with foodborne illnesses and one of the most common symptoms of the gastroenteritis syndrome.

**diastolic blood pressure**

The minimum arterial blood pressure occurring during that portion of the cardiac cycle

when the heart relaxes and the ventricle fills with blood.

**diatom**

A unicellular algae with a yellowish brown color and siliceous shell.

**diatomaceous earth**

Also known as *diatomite*, a chalk-like material (fossilized diatoms) used to filter out solid waste in wastewater treatment plants, also used as an active ingredient in some powdered pesticides and in swimming pool filtration systems.

**diatomaceous earth filter**

Water treatment filter that uses a layer of diatomaceous earth as the filter medium.

**diatomite**

See *diatomaceous earth*.

**diazinon**

An insecticide. In 1986, EPA banned its use on open areas such as sod farms and golf courses because it posed a danger to migratory birds who gathered on them in large numbers. The ban did not apply to its use in agriculture, or on lawns of homes and commercial establishments.

**dichoptic**

Pertaining to viewing conditions in which the visual display to each of the two eyes differs with respect to some property of the stimulus.

**dichotic**

Pertaining to listening conditions in which differential stimulation of the two ears occurs according to some definable physical property of the stimulus such as duration, frequency, phase, intensity, or bandwidth.

**dichromat**

One who has dichromatopsia.

**dichromatopsia**

A form of color blindness involving an inability to discriminate one of the three primary colors: red, green, or blue (in other words, the person is capable of seeing two of the three colors). See also *deuteranopia* and *protanopia*.

**dicofol**

A pesticide used on citrus fruits.

**dielectric heating**

The heating of a nominally insulating material due to its own dielectric losses when the material is placed in a varying electric field.

**diesel-electric plant**

A generating station that uses diesel engines to drive its electric generators.

**diesel fuel**

A fuel composed of distillates obtained in a petroleum refining operation or blends of such distillates with residual oil used in motor vehicles. The boiling point and specific gravity are higher for diesel fuels than for gasoline. See also *diesel fuel system*.

**diesel fuel, No. 1**

A volatile distillate fuel oil with a boiling range between 300 and 575 degrees Fahrenheit and used in high-speed diesel engines generally operated under wide variations in speed and load. Includes type C-B diesel fuel used for city buses and similar operations. Properties are defined in American Society for Testing and Materials (ASTM) Specification D 975.

**diesel fuel, No. 2**

A gas-oil type distillate of lower volatility with distillation temperatures at the 90 percent point between 540 and 640 degrees Fahrenheit for use in high-speed diesel engines generally operated under uniform speed and load conditions. Includes Type R-R diesel fuel used for railroad locomotive engines, and Type T-T for diesel engine trucks. Properties are defined in American Society for Testing and Materials (ASTM) Specification D 975.

**diesel fuel system**

Diesel engines are internal combustion engines that burn diesel oil rather than gasoline. Injectors are used to spray droplets of diesel oil into the combustion chambers, at or near the top of the compression stroke. Ignition follows due to the very high temperature of the compressed intake air, or to the use of "glow plugs," which retain heat from previous ignitions (spark plugs are not used). Diesel engines are generally more fuel efficient than gasoline engines, but must be stronger and heavier due to high compression ratios. See also *carburetor*, *diesel fuel*, and *fuel injection*.

**diet**

- (1) The total food consumed by an individual.
- (2) A prescription of food required or permitted to be eaten by a patient. Also called therapeutic diet.

**dietary supplement**

Under the Federal Food, Drug, and Cosmetic Act: A product (other than tobacco) intended to supplement the diet that bears or contains one or more of the following dietary ingredients: 1) a vitamin; 2) a mineral; 3) an herb or other botanical; 4) an amino acid; 5) a dietary substance for use by man to supplement the diet by increasing the total dietary intake; 6) a concentrate, metabolite, constituent, extract, or combination of any ingredient described in 1), 2), 3), 4), or 5). A dietary supplement is also a product that is 1) intended for ingestion in a form described in the Federal Food, Drug, and Cosmetic Act; 2) is not represented for use as a conventional food or as a sole item of a meal or the diet; and 3) is labeled as a dietary supplement. It does include an article that is approved as a new drug under the Act, certified as an antibiotic under the Act, or licensed as a biologic under the CAA, and was, prior to such approval, certification, or license, marketed as a dietary supplement or as a food unless the Secretary of Health and Human Services has issued a regulation, after notice and comment, finding that the article, when used as or in a dietary supplement under the conditions of use and dosages set forth in the labeling for such dietary supplement, is unlawful under the Act.

**difference limen**

See *difference threshold*.

**difference spectrum**

That spectrum which is obtained by the subtraction of one spectrum from another.

**difference threshold**

The degree or intensity by which two suprathreshold stimuli must differ if a difference is to be noted on a specified percentage of the trials. Also referred to as *differential threshold* and *difference limen*. See also *just noticeable difference*.

**differential**

(1) An amount added or deducted from base rate to make a rate to or from some other point or via another route. (2) *Standard type*. The gear assembly on the drive axle that permits the wheels to turn at different speeds; no-slip or limited-slip type: a gear assembly on the drive axle that will not permit one wheel to spin while the other is motionless.

**differential absorption ratio**

The ratio of concentration of an isotope in a given organ or tissue to the concentration that would be obtained if the same administered quantity of this isotope were uniformly distributed throughout the body.

**Differential Aptitude Test (DAT)**

A commonly used test for determining verbal, abstract, and mechanical reasoning ability, spatial relations, clerical speed and accuracy, and grammatical/spelling skills.

**differential equation**

Any equation containing one or more derivatives of a mathematical function.

**differential piecework**

That form of compensation in which the piece rate is variable, and based on the total number of pieces produced during a specified period.

**differential pressure**

The difference in the static pressure between two locations.

**differential threshold**

See *difference threshold*.

**differential timing**

The use of subtraction or simultaneous equations for obtaining the time value of an extremely short duration work element in a time study by combining the time values of elements preceding and following the element in successive cycles.

**differentiate**

(1) Distinguish between one or more conditions. (2) Mathematically determine the ratio of a small change in a dependent variable as a function of change in the independent variable.

**differentiation**

The process by which single cells grow into particular forms of specialized tissue (e.g., root, stem, leaf).

**diffraction**

The bending or breaking of a ray of light into its individual parts.

**diffuse**

Re-direct or scatter energy transmission in multiple directions over a region.

**diffuse lighting**

That light which is not incident from any particular direction and is of approximately the

same intensity within the volume of consideration.

**diffuse reflectance**

The value of the ratio of diffused flux leaving a surface to the incident flux.

**diffuse reflection**

The distribution of an incident energy flux in many directions from a surface on which it is incident.

**diffuse sound field**

A sound field in which the sound energy will flow in all directions with equal probability. This type of noise environment exists in a reverberation room and can be used to test sound absorption materials.

**diffuse transmission**

The passage of an incident energy flux through a material with a wide distribution either internally or on emergence from that material.

**diffuse transmittance**

The value of the ratio of the flux passed as diffused to the incident flux.

**diffused air**

A type of aeration that forces oxygen into sewage by pumping air through perforated pipes inside a holding tank and bubbling it through the sewage.

**diffusers and grilles**

Components of the ventilation system that distribute and diffuse air to promote air circulation in the occupied space. Diffusers supply air and grilles return air.

**diffusing medium**

See *diffusers and grilles*.

**diffusion**

The continual movement and intermingling of molecules in liquids and gases. These movements are random and are caused by thermal agitation. In the body fluids, the molecules of water, gases, and the ions of substances in solution are in constant motion. As each molecule moves about, it bounces off other molecules and loses some of its energy to each molecule it hits, but at the same time, it gains energy from the molecules that collide with it. The rate of diffusion is influenced by the size of the molecules; larger molecules move less rapidly because they require more

energy to move about. Molecules of a solution of higher concentration move less rapidly toward those of lesser concentration. In other words, the rate of movement from higher to lower concentration is greater than the movement in the opposite direction.

**diffusion detector**

A passive type detection device which utilizes the principle of diffusion as the means to transport airborne contaminants to the detector. No mechanical means is employed to transport the sampled air from the surroundings to the detector. This is often referred to as a *passive sampler* or *passive sampling*.

**diffusion rate**

The rate at which a gas or vapor disperses into or mixes with another vapor. A measure of the tendency of a gas or vapor to disperse into or mix with another gas or vapor.

**diffusive sampling**

See *passive sampling*.

**dig**

A bubble defect which lies on the surface of a transparent material or window.

**digester**

In wastewater treatment, a closed tank; in solid waste conversion, a unit in which bacterial action is induced and accelerated to break down organic matter and establish the proper carbon to nitrogen ratio.

**digestion**

(1) The biochemical decomposition of organic matter, resulting in partial gasification, liquefaction, and mineralization of pollutants. (2) The conversion of materials into simpler compounds, physically or chemically, especially the breaking down of food into substances that can be absorbed into the blood and utilized by the body tissues. Digestion is accomplished by physically breaking down, churning, diluting, and dissolving the food substances, and also by splitting them chemically into simpler compounds. Carbohydrates are broken down to monosaccharides (simple sugars); proteins are broken down into amino acids; and fats are absorbed as fatty acids and glycerol (glycerin). The digestive process takes place in the *alimentary canal*. The salivary glands, liver, gallbladder, and pancreas are located outside the alimentary canal, but they are considered accessory organs of di-



gestion because their secretions provide essential enzymes.

**digestive tract**

See *alimentary canal*.

**digit**

(1) Any of the fingers or toes. A convention is to number the digits with Roman numerals, beginning with the thumb and big toe, for example, the thumb is digit I, index finger is digit II, etc. (2) A numerical symbol, having a potential range of the integers from 0 through 9. The actual range may vary with the number base being used.

**digital brite radar indicator tower equipment (DBRITE)**

Alphanumeric display systems for control towers using digital scan converter systems in a radar scope-type presentation.

**digital dermatoglyph**

See *fingerprint*.

**digital display**

See *numerical display*.

**digital-to-analog conversion**

The process of changing numerical data from a sequence of bits to a continuous graphical curve. Typically done with time series data.

**digital-to-analog converter**

That electrical or electromechanical equipment used for digital-to-analog conversion.

**Digital Versatile Disc (DVD)**

Resembles a standard compact disc (CD), but has much higher capacity. Also called *Digital Video Disc*.

**dihedral angle**

That angle between two planes.

**dike**

(1) A low wall that can act as a barrier to prevent a spill from spreading. (2) A construction, usually of piling or stone and usually at right angles to the current, for the purpose of diverting the river current away from the banks and toward the channel. A dike serves the same purpose as a wingdam. Dike pilings are usually visible at normal water stages but are often submerged in high water and constitute a navigational hazard. See also *hurdle*.

**dike light**

A light installed on the end of a dike, normally a portable, 90-mm, battery-operated, light.

**dilatant**

Property of a liquid whose viscosity increases as agitation is increased.

**dilation**

The process of expanding or enlarging.

**diligence**

(1) Vigilant activity; attentiveness; or care, of which there are infinite shades, from the slightest momentary thought to the most vigilant anxiety. Attentive and persistent in doing a thing; steadily applied; active. (2) The attention and care required of a person in a given situation and is the opposite of negligence. See also *due diligence*.

**diluent**

Material used to reduce the concentration of an active material to achieve a desirable effect.

**diluent gas narcosis**

See *inert gas narcosis* and *nitrogen narcosis*.

**dilute**

To reduce the concentration of a material in the air or in a liquid.

**dilution**

The process of increasing the proportion of the solvent or diluent in a mixture.

**dilution factor**

The volumetric ratio of solvent to solute.

**dilution ratio**

The relationship between the volume of water in a stream and the volume of incoming water. It affects the ability of the stream to assimilate waste.

**dilution ventilation system**

A system of airspace ventilation that relies on the mixing of contaminated air with uncontaminated air for the purpose of controlling potential air borne health hazards. Also referred to as *general exhaust ventilation*.

**dilution weight**

Parameter in the Hazardous Ranking System surface water migration pathway that reduces the point value assigned to targets as the flow or depth of the relevant surface water body increases.



**dim**

To reduce the light intensity from a source.

**dimension**

(1) Any orthogonal spatial axis, typically representing length, width, or depth. (2) An aspect of a picture, concept, or other entity for consideration.

**diminability**

Having the capability of reducing light intensity without turning off one or more sources.

**dimmer**

Any device whose purpose is to cause dimming.

**DIN color system**

A color ordering system based on the relative importance of hue (T), saturation (S), and darkness (D) using a standard daylight ( $D_{65}$ ) and CIE tristimulus values.

**dinner bucket boat**

A boat operating without benefit of a cook house.

**dinocap**

A fungicide used primarily by apple growers to control summer diseases. In 1986, EPA proposed restrictions on its use when laboratory tests found it caused birth defects in rabbits.

**dinoseb**

A herbicide that is also used as a fungicide and insecticide. It was banned by EPA in 1986 because it posed the risk of birth defects and sterility.

**dioctyl phthalate**

A colorless liquid that can be used to generate particles of uniform size (0.3 micrometers diameter) for use in testing the efficiency of filter media.

**diopters**

A measure of the power of a lens, equal to the reciprocal of the focal length in meters.

**diotic**

Pertaining to listening conditions in which both ears are stimulated by identical stimuli.

**dioxide**

An oxide with two oxygen atoms.

**dioxin**

Any of a family of compounds known chemically as dibenzo-*p*-dioxins. Their potential

toxicity and their ability to contaminate commercial products have been the cause of some concern in recent years. Laboratory tests on animals indicate that it is one of the more toxic manmade compounds.

**dip**

*Seismology.* The angle between a geologic surface (for example, a fault plane) and the horizontal. The direction of dip can be thought of as the direction a ball, if placed upon the tilted surface, would roll. Thus, a ball placed on a north-dipping fault plane would roll northward. The dip of a surface is always perpendicular to the strike of that surface. See also *strike*.

**dip slip**

*Seismology.* Fault movement (slip) that is parallel to the dip of the fault. This can describe both normal slip and reverse slip.

**diphtheria**

An acute, contagious disease in children that normally affects the membranes of the throat. The causative agent *Corynebacterium diphtheriae* is spread from the nose, mouth, and throat of infected persons.

**dipacusis binauralis**

A condition in which a single tone, presented to both ears, is perceived as having a different pitch in each ear.

**diplegia**

Paralysis of like parts on either side of the body.

**diploe**

The spongy bone between the inner and outer layers of the flat skull bones.

**diplopia**

An eyesight defect in which an object appears double. Commonly referred to as *double vision*.

**dipsomania**

A mental disease characterized by an uncontrollable desire for intoxicating drinks. An irresistible impulse to indulge in intoxication, either by alcohol or other drugs.

**diphthong**

A vowel sound which involves some articulator movement.

**direct**

*Aviation.* Straight-line flight between two

navigational aids, fixes, points, or any combination thereof. When used by pilots in describing off-airway routes, points defining direct route segments become compulsory reporting points unless the aircraft is under radar contact.

**direct altitude and identity readout (DAIR) system**

The DAIR system is a modification to the AN/TPX42 Interrogator System. The Navy has two adaptations of the DAIR System-Carrier Air Traffic Control Direct Altitude and Identification Readout System for Aircraft Carriers and Radar Air Traffic Control Facility Direct Altitude and Identity Readout System for land-based terminal operations. The DAIR detects, tracks, and predicts secondary radar aircraft targets. Targets are displayed by means of computer-generated symbols and alphanumeric characters depicting flight identification, altitude, ground speed, and Right plan data. The DAIR System is capable of interfacing with ARTCCs.

**direct anthropometric measurement**

The measurement of some anthropometric dimension using one or more tools in physical or near physical contact with the body.

**direct assistance**

Transportation and other relief services provided by a motor carrier or its driver(s) incident to the immediate restoration of essential services (such as electricity, medical care, sewer, water, telecommunications, and telecommunication transmissions) or essential supplies (such as food and fuel). It does not include transportation related to long-term rehabilitation of damaged physical infrastructure or routine commercial deliveries after the initial threat to life and property has passed.

**direct component**

That portion of an energy flux which arrives at a given location on a path from the source, without reflection.

**direct cost**

A cost due to or for supporting direct labor.

**direct current (DC)**

A non-oscillating current flow, traveling only in one direction.

**direct damages**

Those that follow immediately upon the act done. Damages which arise naturally or ordi-

narily from breach of contract. They are damages which, in the ordinary course of human experience, can be expected to result from a breach.

**direct discharger**

A municipal or industrial facility which introduces pollution through a defined conveyance or system; a point source.

**direct filtration**

Filtration process that does not include flocculation or sedimentation pretreatment.

**direct glare**

A type of glare experienced when a bright light source is within an individual's field of view.

**direct injury**

A wrong which directly results in the violation of a legal right and which must exist to permit a court to determine the constitutionality of an act of Congress.

**direct labor**

(1) That effort expended on a product or service which advances that product or service toward its specifications of completion. Also referred to as *productive labor*. (2) Any effort which is readily identified with and chargeable to a specific product or project.

**direct lighting**

That illumination environment in which approximately 90% or more of the luminous flux is directed onto a work or other surface.

**direct loss**

One which results immediately and proximately from an occurrence and not remotely from some of the consequences of effects thereof.

**direct manipulation**

A user-computer interface in which the entity being worked is continuously displayed, the communication involves button clicks and movements instead of text-like commands, and changes are quickly represented and reversible.

**direct manipulation control**

Having command of an object or cursor via the use of a direct manipulation device.

**direct manipulation device**

Any device intended for use in controlling a cursor or other responding object on a display.

Also referred to as *cursor control device* or simply *control device*.

**direct manipulation dialogue**

The manipulation of symbols in display via a cursor.

**direct radiation effect**

Any of those cellular effects in which radiation damage is caused by ionization of the DNA molecules without an intermediate step.

**direct ratio**

The value of the ratio of the luminous flux actually reaching a given surface to the luminous flux emitted from a luminaire.

**direct-reading instrument**

An apparatus providing a direct readout of the contaminant level without further off-site laboratory analysis.

**direct transit passengers**

Passengers stopping temporarily at a designated airport and departing on an aircraft with the same flight number. They are counted only once.

**direct user access terminal system (DUATS)**

An automated pilot self-briefing and flight plan filing system. For pilots with access to a computer, modem, and touch telephone, the system provides direct access to a national weather database and the ability to file flight plans without contact with a flight service station.

**direct viewing**

Having an object, especially one being manipulated, within sight of the unaided eye. Synonymous with *direct vision*.

**direct worker**

An employee involved in direct labor.

**directed verdict**

In a case in which the party with the burden of proof has filed to present a *prima facie* case for jury consideration, the trial judge may order the entry of a verdict without allowing the jury to consider it because, as a matter of law, there can be only one such verdict.

**direction finder (DF)**

A radio receiver equipped with a directional sensing antenna used to take bearings on a radio transmitter. Specialized radio direction finders are used in aircraft as air navigation aids. Others are ground-based, primarily to

obtain a "fix" on a pilot requesting orientation assistance or to locate downed aircraft. A location "fix" is established by the intersection of two or more bearing lines plotted on a navigational chart using either two separately located Direction Finders to obtain a fix on an aircraft or by a pilot plotting the bearing indications of his Direction Finder (DF) on two separately located ground-based transmitters both of which can be identified on his chart.

**direction finder (DF) approach procedure**

Used under emergency conditions where another instrument approach procedure cannot be executed. Direction finder (DF) guidance for an instrument approach is given by Air Traffic Control (ATC) facilities with DF capability.

**direction finder (DF) fix**

The geographical location of an aircraft obtained by one or more direction finders.

**direction finder (DF) guidance**

Headings provided to aircraft by facilities equipped with direction finding equipment. These headings, if followed, will lead the aircraft to a predetermined point such as the direction finder (DF) station or an airport. DF guidance is given to aircraft in distress or to other aircraft which request the service. Practice DF guidance is provided when workload permits.

**directional lighting**

That lighting exposing an object or surface primarily from a given direction.

**directional microphone**

A microphone whose response/sensitivity varies significantly by design with the direction of incident sound.

**directional response**

A usually graphical description of a transducer response as a function of the direction of the emitted/incident energy in a specified plane and/or at a specified frequency.

**directional route miles**

The mileage in each direction over which public transportation vehicles travel while in revenue service. It is computed with regard to direction but without regard to the number of traffic lanes or rail tracks existing in the ROW.

**director's and officer's (D&O) liability insurance**

Insures corporate directors and officers against claims based on negligence, failure to disclose, and to a limited extent, other defalcations. Such insurance provides coverage against expenses and to a limited extent fines, judgments, and amounts paid in settlement. *See also insurance.*

**dirt**

Any material or substance which causes an unclean condition. *See also adhesive dirt, attractive dirt, and inert dirt.*

**dirt depreciation**

A reduction in light transmission or reflection due to dirt accumulation. *See also luminaire dirt depreciation and room surface dirt depreciation.*

**disability**

An impairment or defect of one or more organs or body members. In more general terms, the want of legal capability to perform an act. The term is more typically used to indicate an incapacity for the full enjoyment of ordinary legal rights. For *workers' compensation* purposes, the following categories are generally used to determine the level of benefit to be awarded: (1) *Permanent partial*. A permanent physical impairment (loss of an eye, hand, etc.) that restricts the ability of the worker to perform certain jobs. Benefits are normally based upon the percentage of disability incurred. (2) *Permanent total*. A disability that is so extensive it prevents the worker from obtaining or competing for a job. (3) *Temporary partial*. A condition that leaves the employee capable of performing some work and will probably improve to pre-injury or illness status over time and with treatment. (4) *Temporary total*. A disability that renders the worker incapable of working, but from which he or she is expected to recover fully.

**disability clause**

A provision in an insurance policy calling for the waiver of premiums during a period of disability.

**disability compensation**

Payments from public or private funds to one during a period of disability and incapacity

from work, e.g., social security or workers' compensation disability benefits.

**disability glare**

A viewing condition in which glare interferes with visual clarity, thus reducing visual performance.

**disability insurance**

Insurance coverage purchased to protect the insured financially during periods of incapacity from working. Often purchased by professionals.

**disable**

Ordinarily, to take away the ability of, to render incapable of proper and effective action.

**disabled person**

A person who lacks the legal capacity to act or one who is mentally or physically disabled from acting in his/her own behalf or from pursuing any occupation.

**disabling damage**

Damage which precludes departure of a motor vehicle from the scene of the accident in its usual manner in daylight after simple repairs.

**disabling injury**

Bodily harm resulting in death, permanent disability, or any degree of temporary total disability. It is an injury which prevents a person from performing a regular established job for at least one full day beyond the day the injury occurred.

**disabling injury frequency rate**

The total number of days lost per million employee-hours of exposure. More commonly referred to as *lost-time injury rate*.

**disaster**

A subjective term used to describe a loss, or the degree of loss, resulting from a given event or occurrence. It may include the loss of life, or serious (life-threatening) injuries, or property loss, or any combination of these or other resultant losses.

**disbarment**

Act of a court in suspending an attorney's license to practice law. A disbarment proceeding is neither a civil nor criminal action. It is a special proceeding peculiar to itself, disciplinary in nature, and of summary character resulting from inherent power of courts over their officers.

**disc brake**

(1) A car friction braking system that forces a pad against a metal disc attached to the wheel or axle to produce a retarding force. (2) A brake used primarily on rail passenger cars that uses brake shoes clamped by calipers against flat steel discs.

**disc screen**

A screening device consisting of a circular disc fitted with wire mesh that rotates on a horizontal axis.

**discharge**

(1) In general, a setting free, or liberation. A material or force set free, as electric energy, or an excretion or substance evacuated. (2) According to the Federal Water Pollution Control Act: Includes, but is not limited to, any spilling, leaking, pumping, pouring, emitting, emptying, or dumping. (3) Under the Federal Oil Pollution Act of 1990: Any emission (other than natural seepage), intentional or unintentional, and includes, but is not limited to, any spilling, leaking, pumping, pouring, emitting, emptying or dumping.

**discharge incidental to the normal operation of a vessel**

Under the Federal Water Pollution Control Act: 1) A discharge, including graywater, bilge water, cooling water, weather deck runoff, ballast water, oil water separator effluent, and any other pollutant discharge from the operation of a marine propulsion system, shipboard maneuvering system, crew habitability system, or installed major equipment, such as an aircraft carrier elevator or a catapult, or from a protective, preservative, or absorptive application to the hull of the vessel. 2) A discharge in connection with the testing, maintenance, and repair of a system described above whenever the vessel is waterborne.

**discipline**

A branch of knowledge or learning, such as physics, chemistry, industrial hygiene, safety engineering, etc.

**disclosure guidelines**

As pertains to corporate environmental violations: Guidelines issued in 1991 by the United States Department of Justice which are designed to encourage companies to engage in self-auditing, self-policing, and voluntary disclosure of regulatory violations by employees.

Complete title is *Factors in Decisions on Criminal Prosecutions for Environmental Violations in the Context of Significant Voluntary Compliance or Disclosure Efforts by the Violator*. See also **federal sentencing guidelines for organizations**.

**discometry**

The study or process of measuring the pressure in the nucleus pulposus of an intervertebral disk.

**discomfort**

A state other than well-being due to the presence of one or more undesirable environmental stressors.

**discomfort glare**

A viewing condition in which glare from one or more high-intensity sources within the field of view causes an observer to experience visual pain or annoyance.

**discomfort index**

A method for estimating effective temperature as a heat stress measure.

**discomfort threshold**

That stimulus intensity at which, in a specified proportion of the trials and/or in a specified proportions of individuals, will sufficiently activate a sensory system to cause a reported change from a typical sensation for a given modality to a sensation of being uncomfortable. Sometimes referred to as *threshold of discomfort*.

**disconnecting means**

A device, or group of devices, or other means by which the conductors of a circuit can be disconnected from their source of supply.

**disconnecting switch**

As pertains to systems over 600 volts (nominal) a mechanical switching device used for isolating a circuit or equipment from a source of power.

**discontinued operations income (loss)**

*Transit.* Gain or loss from disposal of investor controlled companies or nontransport ventures. Does not include earnings or losses from discontinued transport or transport-related operations.

**discontinuous timing**

See *repetitive timing*.

**discover**

To uncover that which was hidden, concealed, or unknown from every one. To get first sight or knowledge of; to get knowledge of what has existed but has not previously been known to the discoverer.

**discovery**

(1) *General*. Ascertaining that which was previously unknown; the disclosure or coming to light that which was previously hidden. (2) *Trial Practice*. The pre-trial devices that can be used by one party to obtain facts and information about the case from the other party in order to assist the party's preparation for trial. Under the Federal Rules of Civil Procedure (and in states which have adopted rules patterned on such), tools of discovery include depositions upon oral or written questions, written interrogatories, production of documents or things, permission to enter upon land or other property, physical and mental examinations, and requests for admission.

**discrete**

Having separate, clearly distinguishable components.

**discrete code**

*Aviation*. As used in the Air Traffic Control Radar Beacon System (ATCRBS), any one of the 4096 selectable Mode 3/A aircraft transponder codes except those ending in zero. (e.g., discrete codes: 0010, 1201, 2317, 7777; nondiscrete codes: 0100, 1200, 7700). Nondiscrete codes are normally reserved for radar facilities that are not equipped with discrete decoding capability and for other purposes such as emergencies (7700), visual flight rules (VFR) aircraft (1200), etc. *See also code and decoder*.

**discrete frequency**

*Aviation*. A separate radio frequency for use in direct pilot-controller communications in air traffic control which reduces frequency congestion by controlling the number of aircraft operating on a particular frequency at one time. Discrete frequencies are normally designated for each control sector in en route/terminal Air Traffic Control (ATC) facilities. Discrete frequencies are listed in the Airport/Facility Directory and the Department of Defense (DOD) FLIP Instrument Flight Rules (IFR) En Route Supplement.

**discrete particle settling**

Phenomenon referring to sedimentation of particles in a suspension of low solids concentration.

**discrete spectrum**

A presentation of the amount of energy in a complex waveform at each frequency present in the waveform.

**discrete variable**

A variable which can assume only a specified, finite number of values.

**discrete word recognition**

*See word recognition*.

**discretion**

Having the freedom to make decisions.

**discriminate**

(1) Distinguish reliability between conditions, stimuli, or divisions on a measurement scale. (2) Treat differently based on some attribute of a person.

**discrimination reaction time**

The temporal interval required to discriminate between two or more stimuli and decide if a response is appropriate.

**disease**

A deviation from normal health status associated with a characteristic sequence of signs and symptoms and caused by a specific etiologic agent.

**disequilibrium**

A loss of balance accompanied by swaying of the body and tremors sometimes experienced by workers exposed to whole body vibrations above 2 Hz.

**disfigurement**

That which impairs or injures the beauty, symmetry, or appearance of a person or thing; that which renders unsightly, misshapen, or imperfect, or deforms in some manner.

**disinfect**

Destroy most or all disease-causing microorganisms, except viruses.

**disinfectant**

(1) Chemicals used to reduce or kill microorganisms present on inanimate objects or surfaces. (2) One of three groups of antimicrobials registered by EPA for public health uses. The EPA considers an antimicrobial to be a disinfectant when it destroys or irreversibly



inactivates infectious or other undesirable organisms, but not necessarily their spores. The EPA registers three types of disinfectant products based upon submitted efficacy data: limited, general or broad spectrum, and hospital disinfectant. (3) A chemical or physical process that kills pathogenic organisms in water. Chlorine is often used to disinfect sewage treatment plant effluent, water supplies, wells, and swimming pools.

**disinfection**

The act or process of destroying organisms that may cause disease.

**disinfection byproduct (DBP)**

Byproducts that occur or are anticipated to occur, from the addition of commonly used water treatment disinfectants, including chlorine, chloramine, chlorine dioxide, and ozone.

**disintegrated**

Excessive degree of separation or decomposition into fragments with complete loss of the original form of the material.

**disintegration**

In radiation, the process of spontaneous breakdown of a nucleus of an atom resulting in the emission of a particle and/or photon.

**disintegration constant**

See *decay constant*.

**disinterested**

Not concerned, with respect to possible gain or loss, in the result of the pending proceedings or transactions. Not having any interest in the matter referred to or in controversy; free from prejudice or partiality; impartial or fair method; without pecuniary interest.

**disinterested witness**

One who has no interest in the cause or matter in issue, and who is lawfully competent to testify.

**disk**

(1) A round, flat magnetic or optical medium for storage of digital data. (2) See *intervertebral disk*.

**disk memory**

See *virtual memory*.

**dislocated shoulder**

An injury in which the head of the humerus has been forced out of the glenoid cavity of the scapula.

**dislocation**

Displacement of a bone from a joint. The most common dislocations are those involving a finger, thumb, or shoulder. Less common are those of the mandible, elbow, knee, or hip. Symptoms include loss of motion, temporary paralysis of the involved joint, pain and swelling, and sometimes shock. A dislocation is usually caused by a blow or fall, although unusual physical effort may lead to this condition. Some dislocations, especially of the hip, are congenital, usually resulting from a faulty construction of the joint.

**dismantling allowance**

See *tear-down allowance*.

**dismemberment**

Amputation of an extremity, usually designating separation other than through a joint.

**disorientation**

The loss of the normal recognition of time, place, or persons.

**dispatch point**

A location where arrangements may be made for the short-term or trip rental use of an Interagency Fleet Management System (IFMS) vehicle.

**dispensary**

A place for the dispensation of free or low-cost medical treatment. It is also the name typically given to an on-site medical and/or first aid facility located at remote worksites and usually offering no-cost treatment to employees who have suffered occupational injuries or illnesses.

**dispersant**

A chemical agent that is used to break up or disperse concentrations of a material, such as an oil spill in water.

**dispersion**

(1) The mixing and movement of contaminants in their surroundings (e.g., air) with the resultant effect of diluting the contaminant. (2) The spread of scores or other quantitative results in a given sample or frequency distribution. See also *measure of dispersion and variability*. (3) An indication of the rate of change of the refraction index on the various wavelengths of energy passing through a transparent medium; the spread of white light into its different component wavelengths.

**dispersion rate**

A diffusion parameter of gas plumes or stack effluents.

**dispersion staining**

A particle identification technique in which the material of interest is immersed in a liquid media, such as an oil of specific index of refraction, and examined microscopically (e.g., by polarized light microscopy) for identification.

**displaced threshold**

*Aviation.* A threshold located at a point on the runway other than at the beginning of the usable runway pavement. The displaced area is available for takeoff.

**displacement**

(1) *General.* Removal to an abnormal location or position. (2) *Psychology.* Unconscious transference of an emotion from its original object onto a more acceptable substitute. (3) *Vibration.* The change in distance or position of an object relative to a reference point. (4) *Maritime.* The weight, in tons of 2,240 pounds, of the vessel and its contents. Calculated by dividing the volume of water displaced in cubic feet by 35, the average density of sea water.

**displacement joystick**

See *isotonic joystick*.

**display**

The presentation of data and/or graphics from a system or device in a format designed for human perception through one or more of the senses.

**display-control layout**

An aspect of workstation design involving both the location and grouping of an integrated layout involving both controls and displays for the human operator. Also referred to as *control-display layout*.

**display density**

The proportion of the total screen area which is used to present information or data.

**display format**

That arrangement of the data, command areas, messages, and other features on a display.

**display layout**

The grouping of displays at a workplace. See also *display-control layout*.

**disposable**

An item which is intended for use only once.

**disposable income**

Personal income less personal tax and non-tax payments.

**disposal**

(1) Final placement or destruction of toxic, radioactive, or other wastes; surplus or banned pesticides or other chemicals; polluted soils; and drums containing hazardous materials from removal actions or accidental releases. Disposal may be accomplished through use of approved secure landfills, surface impoundments, land farming, deep well injection, ocean dumping, or incineration. (2) Under the Federal Solid Waste Disposal Act: The discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste or hazardous waste into or on any land or water so that such solid waste or hazardous waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including groundwaters.

**disposal date**

*Transit.* The date a vehicle is disposed of and no longer included in the inventory.

**disposal package**

According to the Federal Nuclear Waste Policy Act of 1982: The emplacement in a repository of high-level radioactive waste, spent nuclear fuel, or other highly radioactive material with no foreseeable intent of recovery, whether or not such emplacement permits the recovery of such waste.

**disposal site**

With regard to ocean dumping of wastes, an interim or finally approved and precise geographical area within which ocean dumping of wastes is permitted under conditions specified in permits issued under the Marine Protection, Research, and Sanctuaries Act of 1972. Such sites are identified by boundaries established by either coordinates of latitude and longitude for each corner, or by coordinates of latitude and longitude for the center point and a radius in nautical miles from that point. Boundary and coordinates shall be identified as precisely as is warranted by the accuracy with which the site can be located with existing navigational aids or by the implementation of

transponders, buoys, or other means of marking the site.

**disposal storage**

*Transit.* An inventory accountability category of vehicles not in use and scheduled for disposal.

**disposal storage date**

*Transit.* The date a vehicle is taken out of service and placed in disposal storage.

**disposal system**

With regard to radiation protection, any combination of engineered and natural barriers that isolate spent nuclear fuel or radioactive waste after disposal.

**disqualification**

(1) The suspension, revocation, cancellation, or any other withdrawal by a state of a person's privileges to drive a commercial motor vehicle. (2) A determination by the Federal Highway Administration (FHWA), under the rules of practice for motor carrier safety contained in 49 CFR 386, that a person is no longer qualified to operate a commercial motor vehicle under 49 CFR 391. (3) The loss of qualification which automatically follows conviction of an offense listed in 49 CFR 383.51.

**dissipating stage**

The final stage in the development of an air mass thunderstorm when downdrafts exist throughout the cumulonimbus cloud.

**dissipative muffler**

A type of acoustic muffler that is typically used for reducing noise emissions from a source, such as large engines. The muffler housing is lined with a sound-absorbing material.

**dissociation**

(1) *General.* Separation into parts or elements. (2) *Psychology.* A mental disorder in which ideas are split off from the personality and are buried in the unconscious. (3) *Chemistry.* The separation of a molecule into two or more constituents as a result of added energy (e.g., heat) or the effect of a solvent on a dissolved polar compound.

**dissolve**

To liquefy by means of a solvent.

**dissolved air flotation (DAF)**

The clarification of flocculated material by contact with minute bubbles of air causing the air/floc mass to be buoyed to the surface, leaving behind a clarified water.

**dissolved nitrogen flotation (DNF)**

The clarification of flocculated material by contact with minute bubbles of nitrogen causing the air/floc mass to be buoyed to the surface, leaving behind a clarified water.

**dissolved organic carbon (DOC)**

The fraction of total organic carbon that is dissolved in a water sample.

**dissolved oxygen**

The oxygen freely available in water. Dissolved oxygen is vital to fish and other aquatic life and for the prevention of odors. Traditionally, the level of dissolved oxygen has been accepted as the single most important indicator of a water body's ability to support desirable aquatic life. Secondary and advanced waste treatment are generally designed to protect dissolved oxygen in waste-receiving waters.

**dissolved solids**

Disintegrated organic and inorganic material contained in water. Excessive amounts render water unsafe to drink or use in industrial processes.

**distal**

Remote; a point or region which is farther from the trunk or point of attachment than some reference point.

**distance**

Expression of the linear measurement of space separating two specified points.

**distance measuring equipment (DME)**

Airborne and ground equipment used to measure, in nautical miles, the slant range distance of an aircraft from the distance measuring equipment (DME) navigational aid.

**distance measuring equipment (DME) fix**

A geographical position determined by reference to a navigational aid which provides distance and azimuth information. It is defined by a specific distance in nautical miles and a radial, azimuth, or course (i.e., localizer) in degrees magnetic from that aid.

**distance measuring equipment (DME) separation**

Spacing of aircraft in terms of distances (nautical miles) determined by reference to distance measuring equipment.

**distance weight**

Parameter in the Hazardous Ranking System air migration, groundwater migration, and soil exposure pathways that reduces the point value assigned to targets as their distance increases from the site.

**distillate**

A liquid product condensed from vapor during distillation.

**distillate fuel oil**

A general classification for one of the petroleum fractions produced in conventional distillation operations. It is used primarily for space heating, on and off highway diesel engine fuel (including railroad engine fuel and fuel for agricultural machinery), and electric power generation. Included are products known as No. 1, No. 2, and No. 4 fuel oils and No. 1, No. 2, and No. 4 diesel fuels. No. 1 distillate is a petroleum distillate which meets the specifications for No. 1 heating or fuel oil as defined in American Society for Testing and Materials (ASTM) D 396 and/or the specifications for No. 1 diesel fuel as defined in ASTM Specification D 975. No. 2 distillate is a petroleum distillate which meets the specifications for No. 2 heating oil or fuel oil as defined in ASTM D 396 and/or the specifications for No. 2 diesel fuel as defined in ASTM Specification D 975.

**distillation**

The act of purifying liquids through boiling so that the steam condenses to a pure liquid and the pollutants remain in a concentrated residue.

**distilled water**

Water which has been heated to its boiling point or above to form steam, then condensed with cooling, the process intending to remove minerals and other materials.

**distort**

Cause a (usually undesirable) change in the natural shape or form of a physical entity, image, information, or energy waveform.

**distract**

Divert attention from, prevent concentration on, or inhibit a timely or correct response on some task.

**distractor**

Any environmental feature which distracts.

**distress**

(1) A condition of being threatened by serious and/or imminent danger and of requiring immediate assistance. (2) The state of being in peril, to any degree, for a person and/or property.

**distressed unit**

A person and/or property in peril to any degree.

**distributary**

A branch of a river that flows away from the main stream and does not return to it.

**distributed control**

Having controlling mechanisms or subsystems at other than a central location.

**distributed control system (DCS)**

A collection of modules, each having a specific function, interconnected to carry out an integrated data acquisition and control operation.

**distributed practice**

A training or experimental procedure in which practice periods are separated by rest periods or periods of different activity. Synonymous with *spaced practice*.

**distribution**

The movement of a chemical substance or foreign material from entry site and throughout the body.

**distribution coefficient ( $K_d$ )**

Measure of the extent of partitioning of a substance between geologic materials (e.g., soil, sediment, rock) and water. The distribution coefficient is used in the Hazardous Ranking System to evaluate the mobility of a substance for the groundwater migration pathway. It is measure as ml/g. Also referred to as *partition coefficient*.

**distribution into commerce**

According to the Federal Toxic Substances Control Act (TSCA), either the introduction, holding, or selling of a chemical substance, mixture, or article into commerce.

**distribution main**

Generally, mains, services, and equipment that carry or control the supply of gas from the point of local supply to and including the sales meters.

**distribution temperature ( $T_d$ )**

That temperature of a blackbody radiator whose relative spectral power distribution is essentially the same as that of the radiation source being considered.

**distributor**

A company primarily engaged in the sale and delivery of natural and/or supplemental gas directly to consumers through a system of mains.

**district attorney**

The law enforcement lawyer, usually a prosecutor, for a region of a state such as a county. Also known as *county attorney* or a *state's attorney*.

**district commander**

The district commander of the Coast Guard or his authorized representative, who has jurisdiction in the particular geographical area.

**disturbance input**

An undesired input affecting the value of an output signal for which control is being attempted.

**disuse osteoporosis**

An osteoporotic condition induced by lack of use rather than a metabolic dysfunction.

**diversant**

A chemical agent used to break up concentrations of organic material, such as spilled oil.

**ditch light**

Spotlight aimed at the right side of a road.

**diuresis**

Secretion of urine; often used to indicate increased function of the kidney.

**diuretic**

(1) Causing diuresis. (2) A substance that stimulates the flow of urine. Certain common substances such as tea, coffee, and water act as diuretics.

**diurnal**

Occurring during a 24-hour period.

**divergence**

(1) *Anatomy*. An outward rotation of both eyes to focus on a point further away from the

observer. (2) *Meteorology*. An atmospheric condition that exists when the winds cause a horizontal net outflow of air from a specific region.

**divergent phoria**

A tendency for an observer to fixate behind a stationary target.

**diverse vector area**

*Aviation Safety*. In a radar environment, that area in which a prescribed departure route is not required as the only suitable route to avoid obstacles. The area in which random radar vectors below the Minimum Vectoring Altitude/Minimum Instrument Flight Rules Altitude (MVA/MIA), established in accordance with the Terminal Instrument Procedures criteria for diverse departures obstacles and terrain avoidance, may be issued to departing aircraft.

**diversion chamber**

A chamber used to divert all or part of a flow to various outlets.

**diversity index**

A mathematical expression that depicts the diversity of a species in quantitative terms.

**diverticulitis**

Inflammation of the diverticula, small blind pouches that form in the lining of the colon. Weakness of the muscles of the colon, sometimes produced by chronic constipation, leads to the formation of diverticula. Inflammation may occur as a result of collections of bacteria or other irritating agents trapped in the pouches. Symptoms include muscle spasms and cramp-like pains in the abdomen, especially in the lower left quadrant. Diagnosis is confirmed by barium enema in which the diverticula are clearly shown.

**divided attention**

That form of attention in which an individual must perform two or more separate tasks concurrently, all of which require attention. Also referred to as *division of work*. See also *attention*.

**divided highway**

A multi-lane facility with a curbed or positive barrier median, or a median that is 4 feet (1.2 meters) or wider.

**division**

Separation into parts.

**division of labor**

The separation of a job into smaller tasks. Also referred to as *division of work* or *divided attention*.

**division of work**

See *divided attention*.

**divulsor**

An instrument for forcible dilation or separation of body parts.

**DM respirator**

Dust and mist respirator.

**DME**

See *distance measuring equipment*.

**DMF respirator**

Dust, mist, and fume respirator.

**DNA**

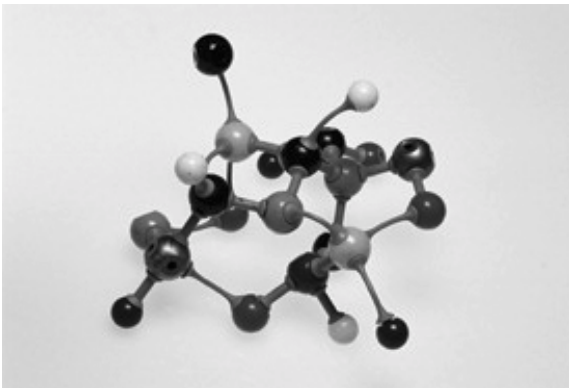
See *deoxyribonucleic acid*.

**DNA hybridization**

Use of a segment of DNA, called a DNA probe, to identify its complementary DNA; used to detect specific genes. This process takes advantage of the ability of a single strand of DNA to combine with a complementary strand.

**DNA identification**

DNA profiling or fingerprinting is an analysis of deoxyribonucleic acid resulting in the identification of an individual's patterned chemical structure of genetic information. A method of determining distinctive patterns in genetic material in order to identify the source of a biological specimen, such as blood, tissue, or hair.



*A model of a DNA segment*

**DNF**

See *dissolved nitrogen flotation*.

**do (DO)**

A physical basic work element in which a worker performs some operation which results in a change in the form, physical condition, or chemical composition of a product.

**DOC**

See *dissolved organic carbon*.

**dock**

(1) *Transportation*. Move a vehicle adjacent to another compatible vehicle or a compatible facility and join the two. (2) *Maritime*. For ships, a cargo handling area parallel to the shoreline; for land transportation, a loading or unloading platform at an industrial location or carrier terminal.

**dock receipt**

(1) Written acknowledgment showing that goods have been delivered and received at a dock or warehouse or ocean liner. (2) A receipt used to transfer accountability when the export item is moved by the domestic carrier to the port of embarkation and left with the international carrier for export.

**dock walloper**

One who loads and unloads vehicles and handles freight on the dock.

**dockage**

Charge assessed against a vessel for berthing at a wharf, pier, bulkhead structure, or bank or for mooring to a vessel so berthed.

**docket**

A minute, abstract, or brief entry, or the book containing such entries. A formal record, entered in brief, of the proceedings in a court of justice.

**doctor blade**

A scraping device used to remove or regulate the amount of material on a belt, roller, or other moving or rotating surface.

**document retention**

See *records retention policy*.

**documented yacht**

A vessel of five or more net tons owned by a citizen of the United States and used exclusively for pleasure with a valid marine document issued by the Coast Guard. Documented vessels are not numbered.





A "documented yacht" according to the U.S. Coast Guard

### **documents against acceptance**

Instructions given by a shipper to a bank indicating that documents transferring title to goods should be delivered to the buyer (or drawee) only upon the buyer's payment of the attached draft.

### **DOE**

Department of Energy (United States).

### **dog**

*Transit (slang)*. A truck with little power.

### **dog chart**

*Railroad*. With respect to rail operations, a diagrammatic representation of the mechanical locking of an interlocking machine, used as a working plan in making up, assembling and fitting the locking. *See also locking dog*.

### **dog tracks**

*Transit (slang)*. Unit or straight truck that runs out of line.

### **DOL**

Department of Labor (United States).

### **doldrums**

The region near the equator that is characterized by low pressure and very light, shifting winds.

### **dolly**

*Transit (trucking)*. An auxiliary axle assembly having a fifth wheel used for purpose of converting a semitrailer to a full trailer.

### **dolomite**

A natural mineral consisting of calcium carbonate and magnesium carbonate. The chemical formula is  $\text{CaMg}(\text{CO}_3)_2$ .

### **dolomite lime**

Lime containing 35-40% magnesium oxide.

### **dolphin**

An isolated cluster of piles used as a support for mooring devices or marker lights. *See also mooring cell*.

### **domestic**

(1) *General*. Produced in the United States, including the Outer Continental Shelf (OCS).  
(2) *Transportation*. Traffic (passengers and freight) performed between airports located within the same country or territory.

### **Domestic Air Defense Identification Zone**

An Air Defense Identification Zone (ADIZ) within the United States along an international boundary of the United States.

### **domestic air operator**

*Aviation*. Commercial air transportation within and between the 50 United States and the District of Columbia. Includes operations of certificated route air carriers, Pan American, local service, helicopter, intra-Alaska, intra-Hawaii, all-cargo carriers, and other carriers. Also included are trans-border operations conducted on the domestic route segments of U.S. air carriers. Domestic operators are classified based on their operating revenue as follows: Major (over \$1 billion); National (\$100-1,000 million); Large Regional (\$10-99.9 million); Medium Regional (\$0-9.99 million).

### **domestic airspace**

Airspace which overlies the continental land mass of the United States plus Hawaii and U.S. possessions. Domestic airspace extends to 12 miles offshore.

### **domestic fleet**

All reportable agency-owned motor vehicles, operated in any State, Commonwealth, Territory or possession of the United States.

### **domestic freight**

All waterborne commercial movements between points in the United States, Puerto Rico, and the Virgin Islands, excluding traffic with the Panama Canal Zone. Cargo moved for the military in commercial vessels is reported as ordinary commercial cargo; military cargo moved in military vessels is omitted.

### **domestic intercity trucking**

Trucking operations within the territory of the United States, including intra-Hawaiian and

intra-Alaskan, which carry freight beyond the local areas and commercial zones.

**domestic operation**

In general, operations within and between the 50 States of the United States, the District of Columbia, American Samoa, Caroline Islands, Guam Island, Johnston Island, Marianna Islands, Midway Island, Puerto Rico, U.S. Virgin Islands, and Wake Island.

**domestic operations**

All air carrier operations having destinations within the 50 United States, the District of Columbia, Puerto Rico, and the U.S. Virgin Islands.

**domestic passenger**

Any person traveling on a public conveyance by water between points in the United States, Puerto Rico, and the Virgin Islands.

**domestic transportation**

Transportation between places within the United States other than through a foreign country.

**domestic wastewater**

Wastewater originating from sanitary conveniences in residential dwellings, office buildings, and institutions. Also called *sanitary wastewater*.

**dominant eye**

The preference for the use of one eye over the other when given a choice (may be subconscious).

**dominant wavelength ( $\lambda$ )**

The visual wavelength represented on a chromaticity diagram by the point of intersection with the spectrum locus of an extended straight line from a sample chromaticity through the achromatic point.

**domino effect**

The descriptive term used to illustrate the cause and effect relationship one event may have to another. As the term implies, one failure event may result in a sequence of additional failure events unless other forces (such as barriers) are in place to prevent or interfere with this process.

**Donaldson scale**

A scoring system based on a large number of variables for judging how well an individual

is capable of performing the activities of daily living, of caring for himself, and of mobility.

**donut area**

The area outside of the Federal Highway Administration (FHWA) approved adjusted boundary of one or more urbanized areas but within the boundary of a National Ambient Air Quality Standards (NAAQS) non-attainment area.

**doodle bug**

A small tractor used to pull two axle dollies in a warehouse.

**door**

A structure commonly having a thickness much less than its length and width, and which is attached on one side by hinges for use in closing off one volume from another.

**door sill step**

On trucks, any step normally protected from the elements by the cab door when closed.

**doorway**

A short passageway surrounded by a frame, in which a door may be mounted.

**Doppler effect**

An observed change in pitch or frequency due to a difference in relative velocity between an energy source and a receiver. Also referred to as the *Doppler shift*.

**Doppler radar**

A radar that determines the velocity of falling precipitation either toward or away from the radar unit using the *Doppler shift* or *Doppler effect*.

**Doppler shift**

See *Doppler effect*.

**dorsal**

Directed toward or situated on the back surface; opposite of ventral.

**dorsal flexor**

See *dorsiflexor*.

**dorsal hand skinfold**

The thickness of a skinfold at the middle of the back of the hand and parallel to the long axis of the hand.

**dorsiflexion**

A motion involving raising the toes and upper part of the foot.

**dorsiflexor**

Any muscle which raises the toes and upper foot about the ankle joint.

**DOS**

Disk operating system. The basic programming required to operate a personal computer system.

**dosage**

A specific quantity of a substance applied to a unit quantity of liquid to obtain a desired effect.

**dose**

(1) *General*. The amount of a substance to which an organism is exposed. (2) *Radiation*. A quantity (total or accumulated) of ionizing (or nuclear) radiation. Exposure dose, expressed in roentgens, is a measure of the total amount of ionization that a quantity of radiation could produce in air. Absorbed dose, expressed in rems or rads, represents the energy absorbed from the radiation per gram of body tissue. Biological dose, expressed in Rems, is a measure of the biological effectiveness of the radiation exposure. (2) *Toxicology*. The total amount of a toxicant, drug, or other chemical administered to the organism.

**dose-effect relationship**

The relationship between the dose given and the occurrence and severity of the effect produced.

**dose equivalent**

In radiation protection, the product of absorbed dose and appropriate factors to account for differences in biological effectiveness due to the quality of radiation and its spatial distribution in the body.

**dose limit**

See *maximum permissible dose*.

**dose rate**

(1) *Industrial Hygiene*. The dose of a hazardous agent (chemical, physical, biological) delivered or taken into the body per unit time. (2) *Radiation*. The amount of ionizing radiation to which an individual would be exposed to that he or she would receive per unit of time.

**dose ratemeter**

An instrument which measures ionizing radiation dose rate.

**dose-response assessment**

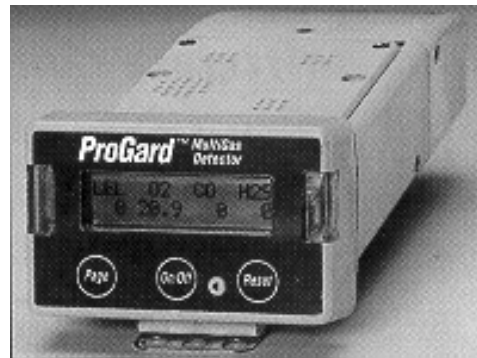
The determination of the relation between the magnitude of the exposure and the probability of the occurrence of an adverse health effect.

**dose-response curve**

A graphical representation of the response of an animal or individual to increasing doses of a substance.

**dose-response relationship**

The relationship between dose administered and resulting response. Simplistically, an increase in the dose results in an increase in the response. It is actually a complex relationship dependent upon many factors.



A type of dosimeter, a multi-gas detector used for monitoring combustible gases, carbon monoxide, hydrogen sulfide, and decreases in oxygen (by MSA, Pittsburgh, PA)

**dosimeter**

An instrument or device used to determine the amount of exposure to an agent or toxic chemical, usually over a period of time. Typically used to measure exposures to noise, radiation, and chemicals.

**dosing siphon**

A siphon that automatically discharges liquid onto a trickling filter bed or other wastewater treatment device.

**dosing tank**

A tank into which raw or partly treated wastewater is accumulated and held for subsequent discharge and treatment at a constant rate.

**DOT**

See *Department of Transportation*.

**dote**

See *decay (4)*.

**double**

(1) *Transit*. A combination of two trailers pulled by a power unit. Usually refers to a

power unit pulling two 28-foot trailers. *See also Rocky Mountain double and turnpike double.* (2) *Maritime.* The maneuver whereby a towboat with barges in tow must break the tow and push half of it into the lock chamber, lock that part through, and then enter the remaining barges with the towboat. In other words, two distinct lockages must be made to pass the entire tow of barges and towboat. Also called *double lockage*.

**double-blind**

An experimental condition in which neither the administrator nor the subject knows the true experimental treatment on a given trial.

**double block and bleed**

A method to isolate a piece of equipment, vessel, confined space, etc. from a line, duct, or pipe by locking or tagging closed two valves in series with each other in the line, duct, or pipe, and locking or tagging open to the outside atmosphere a bleed in the line between the two closed valves.

**double bottom**

*Transit.* A truck unit consisting of a tractor, semitrailer, and full trailer. Also called *twin trailers* and *doubles*.

**double click**

Press a button on a computer input device, such as a mouse, two times within a specified brief time period to command two operations at once, such as specify and open a file. *See also click.*

**double clutching**

Shifting the gears of a truck transmission without clashing them.

**double deck bus**

A bus with two separate passenger compartments, one above the other.

**double-decked buses**

High-capacity buses having two levels of seating, one over the other, connected by one or more stairways. Total bus height is usually 13 to 14.5 feet, and typical passenger seating capacity ranges from 40 to 80 people.

**double heading cock**

*Railroad.* A manually operated valve by means of which the control of brake operation is transferred to the leading locomotive.



*Typical double decked bus*

**double indemnity**

Payment of twice the basic benefit in the event of a loss resulting from specified causes or under specified circumstances. A provision in life insurance contracts requiring payment of twice the face amount of the policy by the insurer in the event of death by accidental means.

**double jeopardy**

A Fifth Amendment guarantee, enforceable against the states through the Fourth Amendment, which protects against a second prosecution for the same offense after acquittal or conviction, and against multiple punishments for the same offense. The "evil" sought to be avoided is double trial and double conviction, not necessarily double punishment.

**double lockage**

*See double.*

**double pole scaffold**

A scaffold supported from the base by a double row of uprights, independent of support from the walls and constructed of uprights, ledgers, horizontal platform bearers, and diagonal bracing. Sometimes referred to as *independent pole scaffold*.

**double shift**

The working of two shifts during a 24-hour period.

**double suction pump**

A centrifugal pump with suction pipes connected to the casing from both sides.

**double trip**

The maneuver necessary when a towboat has more barges in tow than the power of the boat can handle in certain areas of swift current or conditions at the lock will permit. A tow will tie off below the swift water a portion of his tow, push the others above the questionable area, tie them off to the bank, and go back for the remainder of the tow. This is also at times a necessary maneuver in ice.

**double underline**

A highlighting technique in which two horizontal lines are drawn below a line of text or used as a graphic.

**double vision**

See *diplopia*.

**down shape of (revetment, shore, etc.)**

Running the shape of the shore, staying approximately the same distance off the shore at all times.

**Down's syndrome**

A congenital condition characterized by physical malformations and some degree of mental retardation. The disorder is also known as *mongolism* because the person's facial characteristics resemble those persons of the Mongolian race, and *trisomy 21* because the disorder is concerned with a defect in the twenty-first chromosome.

**downburst**

A weather phenomenon described as a severe localized downdraft that can be experienced beneath a severe thunderstorm.

**downcomer**

A pipe directed downward.

**downdraft**

The natural tendency for the river current to pull objects downstream.

**downgrade**

(1) A dilution or reduction of the skill level required for a task or job. (2) The lowering of a particular job in such aspects as responsibility,

scope, degree of difficulty, or wage category.

**download**

To receive a file from another computer via modem or network interface card.

**downtime**

(1) The time during which an operation cannot proceed or a piece of equipment or instrumentation cannot be used productively due to maintenance, breakdown, lack of materials, or other causes. (2) The amount of time a vehicle or equipment is out of service for repair.

**downtown people mover**

A type of automated guideway transit vehicle operating on a loop or shuttle route within the central business district of a city.

**DOX**

Dissolved organic halogen.

**dpm**

Disintegrations per minute.

**Draeger tube**

See *detector tube*.

**draft**

(1) *General*. A first version of a document of product not intended for final release or sale. (2) *Ventilation*. The movement of air in a manner which results in discomfort to persons exposed to it due to its velocity, temperature, or other cause. It also refers to the difference in pressure between the inside and outside of a structure due to a combustion process (e.g., furnace, boiler, etc.). The draft causes the products of combustion to flow from the combustion process to the outside atmosphere. A *back draft* can result if there is insufficient air to sustain the combustion process. (3) *Marine Navigation*. Cross-current tows will drift to the right or left depending on the draft (usually qualified as out draft, or left- or right-handed draft). Also, the depth of water a vessel draws, loaded or unloaded.

**draft tube**

A centrally located vertical tube used to promote mixing in a sludge digester or aeration basin.

**drag**

(1) *General*. To draw across a surface. (2) *Computers*. To move a computer input device



such as a mouse such that a screen element or cursor moves across a display; a direct manipulation operation.

**drag down**

In a manual transmission vehicle, the act of shifting too slowly to lower gears.

**drag tank**

A rectangular sedimentation basin that uses a chain and flight collector mechanism to remove dense solids.

**drain**

(1) *Noun.* A trench or ditch to convey water from wet land; a channel through which water may flow off. The word has no technical legal meaning. Any hollow space in the ground, natural or artificial, where water is collected and passed off is considered a ditch or drain. (2) *Verb.* To conduct water from one place to another, for the purpose of drying the former. To make dry; to draw off water; to rid the land of its superfluous moisture by adapting or improving natural water courses and supplementing them when necessary by artificial ditches. *See also public drainage system.*

**drain tile**

Short lengths of pipes laid in underground trenches to collect and carry away excess groundwater, or to discharge wastewater into the ground.

**drainage basin**

The land drained by a river system.

**drainage district**

A political subdivision of the state, created for the purpose of draining and reclaiming wet and overflowed land, as well as to preserve the public health and convenience.

**drainage rights**

A landowner may not obstruct or divert the natural flow of a watercourse or natural drainage course to the injury of another. In urban areas, "natural drainage course" is narrowly interpreted to include only streams with well-defined channels and banks. In rural areas, the term is more broadly construed, apparently including the flow and direction of diffused surface waters.

**drainage water**

Ground-, surface-, or stormwater collected by a drainage system and discharged into a natural waterway.

**Draize Test**

An animal test procedure for assessing the potential irritation or corrosive effect of a material on the skin or eyes.

**draw back**

Repayment in whole or in part of duties or taxes paid on imported merchandise that is re-exported.

**draw down**

The procedure of spilling water through one dam prior to the arrival of excessive water from the upper reaches of the river. This maneuver is used when flash floods are expected or have occurred or where tributary streams are emptying excessive amounts of water into the main streams.

**draw span**

The movable portion of a bridge deck.

**drawbridge**

A bridge that pivots or lifts so as to let a boat through.

**drawer**

A structure which is usually open on one side and closed on all other sides and the bottom and which is designed to slide into and out of a cabinet, rack, or other housing.

**drayage**

Charge made for local hauling by dray or truck.

**DRE**

*See destruction and removal efficiency.*

**dredge**

To remove sediment or sludge from rivers or estuaries to maintain navigation channels.

**dredge material**

Under the Federal Marine Protection, Research, and Sanctuaries Act of 1972: Any material excavated or dredged from the navigable waters of the United States.

**dredged cut**

(1) One pass made by a dredge in a channel within the confines of the riverbed for the purpose of maintaining the proper depth of water. (2) A dredged channel.

**dredged shipping lane**

Lane that has been dug out to provide an adequate depth of water for navigation.



**dredging**

Removal of mud from the bottom of water bodies using a scooping machine. This process disturbs the ecosystem and causes silting that can kill aquatic life. Dredging of contaminated mud can expose aquatic life to heavy metals and other toxics. Dredging activities may be subject to regulation under Section 404 of the Clean Water Act.

**dredging spoil**

The discharge from a dredge.

**drift**

(1) *General*. Includes any buoyant material that, when floating in navigable waters, may cause damage to a commercial or recreational vessel. (2) *Instrumentation*. The gradual and unintentional deviation of a given variable. It is the gradual change in readout due to component aging, variation in power supply, characteristics of the detector, temperature effect on the detection system, etc. (3) *Maritime*. The motion of a boat floating with no mechanical aid. Also, colloquially used as a synonym for currents. Also referred to as *current, set, or draft*.

**drift barrier**

An artificial barrier designed to catch driftwood or other floating material.

**drift test**

A part of the emissions certification process in which the continuous emissions monitoring system must operate unattended for some period of time without the analyzers drifting out of calibration.

**drifting**

*Marine Navigation*. Underway, but proceeding over the bottom without use of engines, oars or sails; being carried along only by the tide, current, or wind.

**drilling mud**

A fluid, often containing bentonite, used to cool and lubricate a drilling bit and to remove cuttings from the bit and carry them to the well's surface.

**drinking water**

Water safe for human consumption, or for the use in the preparation of food or beverages, or for cleaning articles used in the preparation of food or beverages.

**drinking water cooler**

Under the Federal Safe Drinking Water Act: Any mechanical device affixed to drinking water supply plumbing which actively cools water for human consumption.

**drinking water equivalent level (DWEL)**

The lifetime exposure level at which adverse health effects are not anticipated to occur, assuming 100% exposure from drinking water.

**Drinking Water Priority List (DWPL)**

A 1988 list of drinking water contaminants that may pose a health risk and warrant regulation.

**drinking water supply**

Under the Federal Safe Drinking Water Act: Any raw or finished water source that is or may be used as public water or as drinking water by one or more individuals.

**drip irrigation**

A micro-irrigation water management technique used primarily for landscaping in which drips of water are emitted near the base of the plant either continuously (in especially dry climates) or on a programmed schedule.

**drip proof**

Designation for a motor enclosure with ventilating openings constructed so that drops of liquids or solids falling on the motor will not enter the unit directly or by running along an inwardly inclined surface.

**drive**

(1) To maneuver or control a vehicle designed for essentially 2-dimensional travel, as on the ground or a relatively hard, fixed surface. (2) The motivation required to complete a process, task, or ambition. (3) *Computing*. The mechanism (peripheral device) that allows computer users to access stored or important information.

**driveaway-towaway**

Refers to a carrier operation, such as a fleet of tow trucks, used to transport other vehicles, when some or all wheels of the vehicles being transported touch the road surface.

**driveaway-towaway operation**

Any operation in which a motor vehicle constitutes the commodity being transported and one or more set of wheels of the vehicle being transported are on the surface of the roadway during transportation.

**driver**

(1) *Computing*. In a Windows environment, it is software that Windows loads at startup. Drivers give Windows specific instructions about your video card and printer that Windows and Windows-based applications use to display information on the screen and to print information on your printer. (2) *Transit*. A person who operates a motorized vehicle. If more than one person drives on a single trip, the person who drives the most miles is classified as the principal driver. Also, an occupant of a vehicle who is in physical control of a motor vehicle in transport or, for an out-of-control vehicle, an occupant who was in control until control was lost.

**driver applicant**

An individual who applies to a state to obtain, transfer, upgrade, or renew a commercial driver's license (CDL).

**driver's license**

A license issued by a state or other jurisdiction to an individual which authorizes the individual to operate a motor vehicle on the highways.

**driving a commercial motor vehicle while under the influence of alcohol**

Committing any one or more of the following acts in a commercial motor vehicle (CMV): driving a CMV while the person's alcohol concentration is 0.04 percent or more; driving under the influence of alcohol, as prescribed by state law; or refusal to undergo such testing as is required by any state or jurisdiction in the enforcement of 49 CFR 383.51b2)(i)a) or b), or 49 CFR 392.5a2).

**driving piece**

A crank secured to a locking shaft by means of which horizontal movement is imparted to a longitudinal locking bar.

**driving under the influence (DUI)**

The driving or operating of any vehicle or common carrier while drunk or under the influence of liquor or narcotics.

**driving while intoxicated (DWI)**

An offense committed by one who operates a motor vehicle while under the influence of intoxicating liquor or drugs. A showing of complete intoxication is not required. State statutes specify levels of blood alcohol content at which a person is presumed to be under

the influence of intoxicating liquor. *See also* [blood alcohol count](#), [blood test evidence](#), and [breathalyzer test](#).

**drizzle**

Small drops between 0.2 and 0.5 mm in diameter that fall slowly and reduce visibility more than light rain.

**drop delivery**

The simple release of an object after being transported to some location where it is to be transported further, stored, disposed of, or processed.

**drop it on the nose**

(*slang*). Uncoupling a tractor from a semi-trailer without lowering the landing gear to support the trailer's front end.

**drop the body**

Unhook and drive a tractor away from a parked semi.

**dropping out line**

A line used in dropping a barge out of a tow.

**droplet**

Liquid particle suspended in air, and which settles out quite rapidly.

**drought**

An extended period of dry weather which, as a minimum, can result in a partial crop failure or an inability to meet normal water demands.

**drug**

According to the Federal Food, Drug, and Cosmetic Act: 1) articles recognized in the official United States Pharmacopoeia, official Homeopathic Pharmacopoeia of the United States, or official National Formulary, or any supplement to any of them; and 2) articles intended for use in the diagnosis, cure, mitigation, treatment, or prevention of disease in man or other animals; and 3) articles (other than food) intended to affect the structure or any function of the body of man or other animals; and 4) articles intended for use as a component of any article specified in 1), 2), or 3) above.

**drug abuse**

Legally defined as a state of chronic or periodic intoxication detrimental to the individual and to society, produced by the repeated consumption of a drug, natural or synthetic.

**drug dependence**

Habituation to, abuse of, and/or addiction to a chemical substance.

**drug tolerance**

The progressive decrease in susceptibility of the body to a drug's effects resulting from repeated administrations or addiction.

**drum**

A flat-ended or convex-ended cylindrical packaging made of metal, fiberboard, plastic, plywood, or other suitable materials. This definition also includes packaging of other shapes made of metal or plastic (e.g., round taper-necked packaging or pail-shaped packaging) but does not include cylinders, jerrycans, wooden barrels, or bulk packaging.

**drum pulverizer**

A rotating cylinder used to shred solid waste by the intermingling action of internal baffles acting on the wetted solid waste.

**drum screen**

A cylindrical screening device used to remove floating and suspended solids from water or wastewater.

**dry adiabatic rate**

The rate of change of temperature in a rising or descending unsaturated air parcel. The rate of adiabatic cooling or warming is 10°C per 1000 meters (5.5°F per 1000 feet).

**dry-bulb temperature (DBT)**

The temperature derived from a thermal sensor or a thermometer that is shielded from direct radiant energy. It is used for estimating comfort conditions and is also one of three ambient indices used for heat-stress analysis.

**dry bulk cargo**

Cargo which may be loose, granular, free-flowing or solid, such as grain, coal, and ore, and is shipped in bulk rather than in package form. Dry bulk cargo is usually handled by specialized mechanical handling equipment at specially designed dry-bulk terminals.

**dry-bulk container**

A container constructed to carry grain, powder and other free-flowing solids in bulk. Used in conjunction with a tilt chassis or platform.

**dry cargo**

Cargo that does not require temperature control.

**dry chemical**

An extinguishing agent composed of very small particles of chemicals such as, but not limited to, sodium bicarbonate, potassium bicarbonate, urea-based potassium bicarbonate, potassium chloride, or monoammonium phosphate supplemented by special treatment to provide resistance to packing and moisture absorption (caking) as well as to provide proper flow capabilities. Dry chemical does not include dry powders.

**dry cleaning wastes**

Wastewater from laundry cleaning operations that use non-aqueous chemical solvents to clean fabrics.

**dry film thickness (DFT)**

Thickness of a dried paint or coating, usually expressed in mils.

**dry gas**

Natural gas from which the entrained liquids and nonhydrocarbon gases have been removed by lease facilities and/or plant processing. This is the gas that the interstate pipeline purchased, or expects to purchase, to serve its annual requirements.

**dry-gas meter**

A secondary air flow calibration device, similar to a domestic gas meter, that can be used for determining the flow rate of air sampling pumps.

**dry hole**

An exploratory or development well found to be incapable of producing either oil or gas in sufficient quantities to justify completion as an oil or gas well.

**Dry Ice™**

A trademark for solid carbon dioxide. It is frequently used as a refrigerant that vaporizes without passing through a liquid state.

**dry line**

A boundary that separates warm, dry air from warm, moist air. It usually represents a zone of instability along which thunderstorms form.

**dry location**

See *location*.

**dry powder**

A compound used to extinguish class D fires. See also *class D fire*.

**dry run**

A trial run without the use of hazardous materials, or the operation of a process at less than design, in order to identify problems, verify operating characteristics/parameters, test procedures, etc.

**dry weather flow (DWF)**

The flow of wastewater in a sanitary sewer during dry weather. The sum of wastewater and dry weather infiltration.

**dry well**

(1) A dry compartment in a pumping station where pumps are located. (2) A well that produces no water.

**drydock**

An artificial basin fitted with gate or caisson into which a vessel may be floated and from which the water may be pumped out to expose the bottom of the vessel.

**drydock gate**

Gate at the entrance to a drydock.

**dual capacity doctrine**

If an employer acts in a capacity other than that strictly of employer in a "dual capacity State" and an employee is injured, then the employer may be sued for negligence arising out of its dual capacity role.

**dual drive**

Also referred to as *tandem* drive. Box axles have drive mechanisms and are connected to engine power output. There are two common types: a) pusher tandem: only the rearmost axle is driving type and the forward unit is free rolling, also called "dead axle;" b) tag axle: forward unit of tandem is driving type while rear unit is free rolling.

**dual flow screen**

A traveling water screen arranged in a channel so that water enters through both the ascending and descending wire mesh panels and exits through the center of the screen.

**dual media filter**

Granular media filter utilizing two types of filter media, usually silica sand and anthracite.

**dual shift**

An operating mode in which workers are working two shifts, usually with the employees divided into two teams.

**duals**

(*slang*). A pair of tires mounted together.

**DUAT**

See *dial up access terminal*.

**DUATS**

See *direct user access terminal system*.

**duck water**

Slack water. Smooth water generally found on the inside shore of a river bend, under a point, under a bar, etc.

**duckweed**

See *Lemnaceae*.

**duct**

A conduit used for conveying air at low pressure.

**duct velocity**

(1) The air velocity within a duct carrying that air to some location. (2) The air velocity through a duct cross-section.

**ductile fracture**

A type of failure mode in structural materials generally preceded by large amounts of plastic deformation and in which the fracture surface is inclined to the direction of the applied stress.

**ductless fume hood**

A hood which returns filtered air to the area where it is located. This type hood is to be used only with nontoxic chemicals. Also referred to as a *ductless lab hood*.

**ductless lab hood**

See *ductless fume hood*.

**dudding**

The process of permanently degrading an electroexplosive initiator to a state where it cannot perform its designed function.

**due care**

Just, proper, and sufficient care, so far as circumstances demand; the absence of negligence. That degree of care that a reasonable person can be expected to exercise to avoid harm reasonably foreseeable if such care is not taken. See also *ordinary care and reasonable care*.

**due compensation**

Term used in eminent domain and refers to the value of land taken and the damages, if any, which result to the owner as a conse-

quence of the taking without considering either general benefits or injuries. *See also just compensation.*

**due diligence**

Such a measure or prudence, activity, or assiduity, as is properly to be expected from, and ordinarily exercised by, a reasonable and prudent person under the particular circumstances; not measured by any absolute standard, but depending on the relative facts of the special case.

**due diligence steps**

Under the Federal Sentencing Guidelines (FSGs): Good faith efforts to prevent statutory violations. The seven steps or elements of an effective compliance program under the FSGs are considered due diligence steps.

**due process of law**

Law in its regular course of administration through the courts of justice.

**due process rights**

All rights which are of such fundamental importance as to require compliance with due process standards of fairness and justice.

**DUI**

The crime of driving under the influence of alcohol or drugs. *See driving while intoxicated.*

**dumb barge**

Slang term for a barge that does not have its own power.

**dumb terminal**

A CRT and keyboard having no local processing capability other than simple input/output.

**dummy**

*See mannequin.*

**dummy variable**

A discrete variable in regression analysis which is not continuously distributed and has at least two distinct values.

**dump**

A site used to dispose of solid wastes without environmental controls.

**dump body**

Truck body of any type which can be tilted to discharge its load.

**dumping**

A disposition of material.

**Dunn cell**

A glass device formerly used to contain an aliquot of the dust collecting media in which the airborne dust sample was collected and which enabled counting of the dust so that a determination of its concentration could be made.

**dunnage**

Pieces of wood placed against the sides and bottom of the hold of a vessel, to preserve the cargo from the effect of leakage, according to its nature and quality.

**duplex pump**

A reciprocating pump having two side-by-side cylinders and connected to the same suction and discharge lines.

**duplex stainless steel**

A high-strength stainless steel containing two forms of iron, typically austenite and ferrite.

**duplicate samples**

Provide information about the precision of a laboratory's results by providing a check to determine if the correct sampling technique or method was used; may be a mandatory requirement of some regulatory agencies. Duplicate samples should be collected at locations where suspected contaminant levels are believed to be at their highest concentrations.

**dura matter**

The tough, outermost membrane which covers the surface of the brain and spinal cord.

**duration of exposure**

The period of time during which exposure to a hazardous substance or physical agent occurs, or how long a time one works with a substance or in the environment where the agent is used.

**dust**

Small airborne or settled solid particles usually formed by abrasion or arising from soil, bedding, or from surfaces such as floors and walls.

**dust collector**

An air-cleaning device for removing particulates from air being discharged to the environment.

**dust devil**

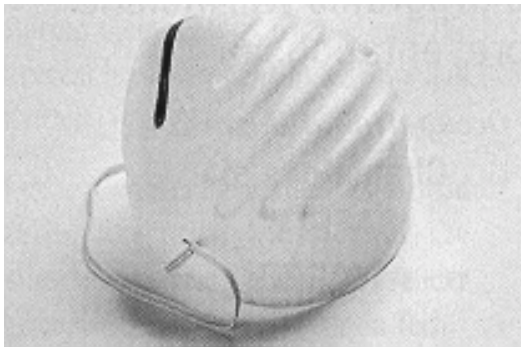
Common term used to describe a *whirlwind* which is a small but rapidly rotating wind made visible by dust, sand, and debris it picks up from the surface. It develops on clear, dry, hot afternoons.

**dust explosion**

A dust combustion process so confined as to result in an appreciable rise in pressure.

**dust mask**

A semipermeable facial mask used to protect the wearer from respirable dust particles that are airborne in the work environment. There are many types; most are disposable and should be replaced once breathing becomes difficult due to the saturation of the mask material by dust particulates.



*Typical disposable dust mask*

**dustfall jar**

An open container used to collect large particles from the air for measurement and analysis.

**dusting**

*Transit (slang)*. Driving with wheels on road shoulder, thereby causing a cloud of dust.

**dustproof**

Constructed such that dust will not interfere with its operation.

**duty**

(1) *Law*. A human action which is exactly conformable to the laws which require us to obey them. Legal or moral obligation. An obligation that one has by law or contract. (2) *Immigration*. A tax imposed by a government on imports

**DVD**

See *Digital Versatile Disc*.

**DVFR**

See *defense visual flight rules*.

**Dvorak keyboard**

See *QWERTY keyboard*.

**DWEL**

See *drinking water equivalent level*.

**dwelt time**

(1) That length of time for which the eye is fixated on a given point or within a specified region. (2) That period of time which an aircraft or other vehicle is capable of staying at or over its destination/target before having to return.

**DWF**

See *dry weather flow*.

**DWI**

See *driving while intoxicated*.

**DWPL**

See *Drinking Water Priority List*.

**dwt**

Deadweight tons.

**dynamic**

Involving motion or progress; not static.

**dynamic action**

Any muscle contraction or elongation. See also *isotonic action, isoinertial action, isokinetic action, eccentric action, and concentric action*.

**dynamic anthropometry**

Study and/or measurement of the changes in body dimensions during motion. Also called *functional anthropometry*.

**dynamic display**

Any display containing one or more screen structures which are updated at or near real time.

**dynamic equilibrium**

The ability to maintain and control body position while in motion through the integrated involvement of the cristae in the semicircular ducts, vision, and the cerebellum and muscle activity. See also *static equilibrium*.

**dynamic flexibility**

The ability to perform extension flexibility rapidly and repetitively.

**dynamic loss**

See *turbulence loss*.

**dynamic measurement**

An aspect of anthropometry involving the correct location of controls, tools, and other items requiring worker manipulation.



**dynamic modulus**

The ratio of stress to strain under vibro-acoustic conditions.

**dynamic moment**

See *angular acceleration*.

**dynamic muscle work**

See *dynamic work*.

**dynamic response index model (DRI)**

A model representing the human torso as a single-degree-of-freedom system for predicting probability of spinal injury for a given  $+g_z$  acceleration time history, assuming a restrained seated crew member in an ejection seat.

**dynamic routing**

In demand-response transportation systems, the process of constantly modifying vehicle routes to accommodate service requests received after the vehicle began operations, as distinguished from predetermined routes assigned to a vehicle.

**dynamic strength**

A measure of the ability to apply force through a range of motion.

**dynamic vision**

The ability to interpret moving visual stimuli.

**dynamic visual acuity**

A measure of the ability to resolve detail in a changing or moving stimulus. See also *visual acuity*.

**dynamic work**

The work performed when one or more muscle lengths change, producing external motion. Also referred to as *dynamic muscle work*.

**dynamics**

The study of the body in motion, whether due to internal generation or external forces.

**dynamite the brakes**

*Transit (slang)*. An emergency stop using every brake on the unit.

**dynamograph**

See *oscillograph*, *kymograph*, and *polygraph*.

**dynamometer**

A device for measuring external force or torque, especially that generated by human muscular contraction. See also *Asmussen dynamometer* and *Cyber dynamometer*.

**dyne**

The unit of force that, when acting upon a mass of 1 gram, will produce an acceleration of 1 centimeter per second per second.

**dysarthria**

Imperfect articulation of speech due to disturbances of muscular control which result from damage to the central nervous system or peripheral nervous system.

**dysbaric osteonecrosis**

A form of decompression sickness resulting in bone lesions, especially near joints. Probably due to air embolism. Also known as *aseptic bone necrosis*.

**dysbarism**

Chemical effects resulting from exposure to an atmospheric pressure different from that of the total gas pressure within the body.

**dyscrasia**

A morbid condition caused by poisons in the blood.

**dysentery**

A lower intestinal infection caused by bacteria, protozoa, or virus, and associated with diarrhea and cramps. Dysentery is less prevalent today than in years past because of improved sanitary facilities throughout the world; it was formerly a common occurrence in crowded parts of the world and it particularly plagued army camps. In dysentery, there is an unusually fluid discharge of stool from the bowels, as well as fever, stomach cramps, and spasms of involuntary straining to evacuate, with passage of little feces. The stool is often mixed with pus and mucus and may be streaked with blood.

**dysfunction**

Any impaired function of some body part or of the body as a whole.

**dyskinesia**

Any of a variety of abnormal involuntary movements, generally due to some pathology in the extrapyramidal system. See also *tremor*, *athetosis*, *chorea*, *ballism*, and *movement disorder*.

**dyslalia**

Any speech impairment due to some defect in the speech-generating structures, especially the tongue.

**dyslexia**

A difficulty in reading, or an inability to learn how to read.

**dysmenorrhea**

Painful menstruation, characterized by cramp-like pains in the lower abdomen, and sometimes accompanied by headache, irritability, mental depression, malaise, and fatigue.

**dysmetria**

An inability to perform accurate control of range of voluntary movement, especially of the hand.

**dyspepsia**

Impairment of the function of digestion.

**dysphagia**

Difficulty in swallowing.

**dysphasia**

Impairment of ability to understand and use the symbols of language, both spoken and written.

**dysplastic**

A body type which cannot be readily classified as any of Kretschmers' standard athletic, asthenic, or pyknic somatotypes; misshapen. *See also Kretschmer somatotype.*

**dyspnea**

Shortness of breath, or the sensation of it, due to labored breathing.

**dystonia**

A movement disorder involving lack of normal muscle tone.

**dystrophic lakes**

Shallow bodies of water with a high humus and/or organic matter content, that contain many plants but few fish and are highly acidic.

**dystrophy**

Any disorder caused by defective nutrition.

**dysuria**

Painful or difficult urination.

Vincoli, Jeffrey W. "E-H"

*Lewis' Dictionary of Occupational and Environmental Safety and Health*

Edited by Jeffrey W. Vincoli

Boca Raton: CRC Press LLC, 2000

# E

## ear

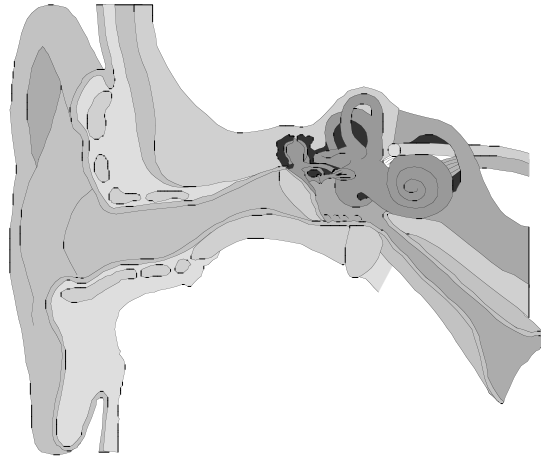
A structure within and external to the side of the head consisting of three major aspects (external ear, middle ear, and inner ear), which is used for hearing and equilibrium. The outer ear consists of the auricle, or pinna, and the external acoustic meatus. The auricle collects sound waves and directs them to the external acoustic meatus which conducts them to the tympanum (the cavity of the middle ear). The tympanic membrane (eardrum) separates the outer ear from the middle ear. In the middle ear are the three ossicles: the malleus (referred to as the "hammer" because of its shape), the incus (or "anvil") and the stapes (or "stirrup"). These three small bones form a chain across the middle ear from the tympanum to the oval window in the membrane separating the middle ear from the inner ear. The middle ear is connected to the nasopharynx by the Eustachian tube, through which the air pressure on the inner side of the eardrum is equalized with the air pressure on its outside surface. The middle ear is also connected with the cells in the mastoid bone just behind the outer ear. Two muscles attached to the ossicles contract when loud noises strike the tympanic membrane, limiting its vibration and thus protecting it and the inner ear from damage. In the inner ear (or labyrinth) is the cochlea, containing the nerves that transmit sound to the brain. The inner ear also contains the semicircular canals, which are essential to the sense of balance. When sound strikes the ear, it causes the tympanic membrane to vibrate. The ossicles function as levers, amplifying the motion of the tympanic membrane, and passing the vibrations on to the cochlea. From there, the vestibulocochlear (eighth cranial) nerve transmits the vibrations, translated into nerve impulses, to the auditory center in the brain. *See also external ear, middle ear, and inner ear.*

## ear breadth

The horizontal linear distance from the most anterior point to the most posterior point of the external ear. Measured with the head level and the scalp and facial muscles relaxed.

## ear clearing

The process of equalizing pressure between the middle ear and the external environment. Commonly accomplished by holding one's mouth closed, pinching the nostrils closed, and gently blowing through the nose until the pressure is equalized.



*The human ear and surrounding components*

## ear defender

Outdated term for devices, such as earplugs, earmuffs, canal caps, etc., that are used by individuals to provide personal hearing protection from noise.

## ear insert

A hearing protective device that is designed to be inserted into the ear canal in order to reduce the level of noise reaching the hearing sensitive part of the ear.

## ear length

The vertical distance between the highest point of the upper rim and the most inferior point of the ear lobe of the external ear. Measured with the head level and the scalp and facial muscles relaxed.

## ear length above tragion

The vertical distance along the axis of the auricle from tragion to the level of the upper rim.

## ear mark

A mark put upon a thing to distinguish it from another. Originally, and literally, a mark upon the ear; a mode of marking sheep and other animals.

**ear mark rule**

Through the process of commingling money or deposits with funds already in a bank, the money or deposits lose their "identity," with the resultant effect of defeating the right of preference over general creditors.

**ear protector**

Any device designed to reduce the level of noise passing through a person's auditory system (ear muffs, ear plugs, etc.).

**ear protrusion**

The horizontal distance from the bony eminence directly behind the auricle to the most lateral protrusion of the auricle. Measured with the head level and the scalp and facial muscles relaxed.

**ear squeeze**

See *barotalgia*.

**ear witness**

In the law of evidence, one who attests or can attest anything as heard by himself/herself.

**earache**

Pain in the ear. Medically referred to as *otalgia*.

**earblock**

The failure of the middle ear to equalize pressure with the external environment due to blockage of the Eustachian tube.

**earcon**

The auditory counterpart of the visual icon.

**earcup**

The cavity on the lateral interior structure of a helmet, headphone, or other headgear, into which the pinna is expected to fit when the headgear is worn.

**eardrum**

The tympanic membrane that separates the outer ear from the middle ear.

**earflap**

Any piece of cloth, fur, or other soft material designed into headwear for protecting the auricle from cold, sun, or other environmental stressors.

**earlier maturity rule**

The rule under which bonds maturing first are entitled to priority when the sale of a security is not sufficient to satisfy all obligations.

**earlobe**

The fleshy tissue at the base of the auricle.

 **earmuffs**

Devices worn to protect against hearing loss in high-noise environments or to protect against exposure to cold. See also *circumaural protectors*.

**earn**

To acquire by labor, service, or performance. To merit or deserve, as for labor or service.

**earned income**

Income from services (e.g., salaries, wages, or fees); distinguished from passive, portfolio, and other unearned income.

**earned income credit**

A refundable tax credit on earned income up to a certain amount for low income workers who maintain a household for dependent children. The amount of the credit is reduced dollar for dollar if earned income (or adjusted gross income) is greater than a specified amount.

**earned premium**

In insurance, that portion of the premium properly allocable to a policy which has expired. An "earned premium" is the difference between the premium paid by the insured and the portion returnable to him/her by the insurance company on cancellation of the policy during its term.

**earned surplus**

Retained earnings. That species of surplus which has been generated from profits as contrasted with paid-in surplus. The term relates to the net accumulation of profits. It is a part of the surplus that represents net earnings, gains or profits, after deduction of all losses, but has not been distributed as dividends, or transferred to stated capital or capital surplus, or applied to other purposes permitted by law.

**earned time**

The standard time, in a specified time unit (usually hours), which is credited to one or a group of personnel on completion of one or more jobs.

**earnest money**

A sum of money paid by a buyer at the time of entering a contract to indicate the intention and ability of the buyer to carry out the con-

tract. Normally, such earnest money is applied against the purchase price. Often, the contract provides for forfeiture of this sum if the buyer defaults.

#### **earning capacity**

Refers to the capability of a worker to sell his/her labor or services in any market reasonably accessible to him/her, taking into consideration his/her general physical functional impairment resulting from his/her accident, any previous disability, his/her occupation, age at the time of injury, nature of the injury, and his/her wages prior to and after the injury. The term does not necessarily mean the actual earnings that one who suffers an injury was making at the time the injuries were sustained, but refers to that which, by virtue of the training, the experience, and the business acumen possessed, an individual is capable of earning.

#### **earnings**

*Income.* That which is earned (i.e., money earned from the performance of labor, services, sale of goods, etc.). *Gross earnings.* Total income from all sources without considering deductions, personal exemptions, or other reductions of income in order to arrive at taxable income. *Net earnings.* The excess of gross income over expenses incurred in connection with the production of such income.

#### **earnings and profits**

A tax concept peculiar to corporate taxpayers which measures the economic capacity to make a distribution to shareholders that is not a return of capital. Such a distribution will result in dividend income to the shareholders to the extent of the corporation's current and accumulated earnings and profits.

#### **earnings per share**

One common measure of the value of common stock. The figure is computed by dividing the net earnings for the year (after interest and prior dividends) by the number of shares of common stock outstanding.

#### **earnings profile**

An individual's anticipated future annual income from employment. Use often during litigation proceedings of wrongful death claims to determine the lifetime earnings the

deceased would have been expected to accumulate had the fatality never occurred.

#### **earphone**

An electro-acoustic transducer intended to be closely coupled acoustically to the ear.

#### **earplugs**

Any device which fits into the external auditory canal for the purpose of reducing the acoustic intensity reaching the eardrum. Usually constructed of a soft, sponge-like material allowing for "one-size-fits-all." *See also aural insert protectors and ear protector.*

#### **earring**

A piece of jewelry worn on or about the earlobe. It can be fastened by a mechanical clip or pierced directly through the lobe or other portion of the external ear.

#### **earth surface**

The outermost surface of the land and waters of the planet.

#### **earthquake**

*See plate tectonics.*

#### **earwax**

Cerumen.

#### **EAS**

*See Employee Aptitude Survey.*

#### **ease**

To provide or obtain comfort, consolation, contentment, enjoyment, happiness, pleasure, satisfaction.

#### **easement**

A right of use over the property of another. Traditionally the permitted kinds of uses were limited, the most important being rights of way and rights concerning flowing waters. The easement was normally for the benefit of adjoining lands, no matter who the owner was (an *easement appurtenant*), rather than for the benefit of a specific individual (*easement in gross*). The land having the dominant tenement and the land which is subject to the easement is known as the *servient tenement*.

#### **easterly wave**

A migratory wavelike disturbance in the tropical easterlies. Easterly waves occasionally intensify into tropical cyclones.

#### **Eastern California Shear Zone (ECSZ)**

A region of increased seismic activity which stretches from the San Andreas fault near In-



dio, north-northwest across the Mojave and northward into Owens Valley. It may accommodate as much as 10 to 20 percent of the relative motion between the North American and Pacific Plates.

**EAT**

Earnings after taxes.

**eat inde sine die**

*Law (Latin).* Words used on the acquittal of a defendant, or when a prisoner is to be discharged, *that he may go thence without a day*, (i.e., be dismissed without any further continuance or adjournment).

**eaves-drip**

The drip or dropping of water from the eaves of a house on the land of an adjacent owner; the easement of having the water so drip, or the servitude of submitting to such drip.

**eavesdropping**

Knowingly and without lawful authority: a) entering into a private place with intent to listen surreptitiously to private conversations or to observe the personal conduct of any other person or persons therein; or b) installing or using outside a private place any device for hearing, recording, amplifying, or broadcasting sounds originating in such place, which sounds would not ordinarily be audible or comprehensible outside, without the consent of the person or persons entitled to privacy therein; or c) installing or using any device or equipment for the interception of any telephone, telegraph, or other wire communication without the consent of the person in possession or control of the facilities for such wire communication. Such activities are regulated by state and federal statutes, and commonly require a court order.

**ebonation**

The removal of loose pieces of bone from a wound.

**ebriety**

Drunkenness; alcoholic intoxication.

**Ebstein's anomaly**

A malformation of the tricuspid valve, usually associated with an atrial septal defect.

**EC<sub>50</sub>**

Concentration in which a given effect (e.g., death, incoordination) is observed in 50 percent of exposed organisms. The effective

concentration for 50 percent of exposed organisms is usually reported along with the duration of exposure (e.g., 96 hours EC<sub>50</sub>).

**eccentric action**

A dynamic muscle action which involves muscle lengthening with an increase in muscle tension. Also referred to as *eccentric contraction* and *eccentric muscle contraction*.

**eccentric contraction**

See *eccentric action*.

**eccentric muscle contraction**

See *eccentric action*.

**eccentricity**

Personal or individual peculiarities of mind and disposition which markedly distinguish the subject from the ordinary, normal, or average types of men/women, but do not amount to mental unsoundness or insanity.

**ecchymosis**

A small hemorrhagic spot in the skin or mucous membrane forming a non-elevated blue or purplish spot.

**eccrine gland**

A sweat gland whose ducts terminate on the free skin surface. See also *apocrine gland*.

**ECD**

Electron capture detector. Used in gas chromatography primarily to analyze halogenated organics.

**ECG**

See *electrocardiogram*.

**echo**

(1) To display on a computer screen the character or other symbol typed on a keyboard.  
(2) An acoustic or electromagnetic reflected energy signal which has sufficient magnitude and delay to be distinguishable from the original emitted signal.

**echoacousia**

The subjective hearing of repetition of sound after the stimuli producing it have ceased.

**echocardiogram**

The record produced by echocardiography.

**echocardiography**

The recording of the position and motion of the heart borders and valves by reflected echoes of ultrasonic waves transmitted through the chest wall.

**echoencephalogram**

The record produced by echoencephalography.

**echoencephalography**

The mapping of intracranial structures by means of reflected echoes of ultrasound transmitted through the skull.

**echography**

See *sonography*.

**echoic memory**

A sensory memory associated with the auditory system.

**echovirus**

A group of viruses, the name of which was derived from the first letters of the description "enteric cytopathogenic human orphan." At the time of the isolation of the viruses, the diseases they caused were not known, hence the term "orphan." But it is now known that these viruses produce many different types of diseases, including forms of meningitis, diarrhea, and various respiratory diseases.

**ecological impact**

The effect that a manmade or natural activity has on living organisms and their non-living (abiotic) environment.

**ecological stress vector**

See *environmental stressor*.

**ecology**

The relationship of living things to one another and their environment, or the study of such relationships.

**economic discrimination**

Any form of discrimination within the field of commerce such as a boycott of a particular product or price fixing.

**economic duress**

A legal defense of "economic duress," or business compulsion, arises where one individual, acting upon another's fear of impending financial injury, unlawfully coerces the latter to perform an act in circumstances which prevent his/her exercise of free will.

**economic impact analysis**

A corporate analysis which assesses direct and indirect costs of a rule or policy and examines how it will affect the local, regional, and national economies and what economic sectors will bear the burden of costs. It esti-

mates the magnitude and distribution of the financial burden but does not assess whether or not the rule or policy is nonetheless worthwhile.

**economic life**

That period of time which either minimizes an asset's total equivalent annual cost or maximizes an asset's equivalent annual net income. Also referred to as *minimum cost life* and *optimum replacement interval*.

**economic loss**

In a products' liability action, recovery of damages for "economic loss" includes recovery for costs of repair and replacement of defective property which is the subject of the transaction, as well as commercial loss for inadequate value and consequent loss of profits or use.

**economic obsolescence**

Loss of desirability and useful life of property due to economic developments (e.g., deterioration of neighborhood or zoning change) rather than deterioration (functional obsolescence).

**economic poisons**

Chemicals used to control pests and to defoliate cash crops such as cotton.

**economic strike**

Refusal to work because of a dispute over wages, hours or working conditions, or other conditions of employment. An economic strike is one neither prohibited by law nor by collective bargaining agreement nor caused by employer unfair labor practices, but is typically for the purpose of enforcing employer compliance with union collective bargaining demands, and economic strikers possess more limited reinstatement rights than unfair labor practice strikers.

**economic waste**

An overproduction or excessive drilling of oil or gas.

**economies of scale**

Cost reductions or productivity efficiencies achieved through size-optimization in relation to operational circumstances. For example, commodity freight rates usually decline as the volume of cargo tonnage shipped increases.

**economy**

(1). *General*. Frugal management of money, materials, resources, and the like. Also, the

practical administration of the material resources of a country, community, or establishment. (2) *Transportation*. Transport service established for the carriage of passengers at fares and quality of service below that of coach service.

**economy of scale factor**

The ratio of the change in investment cost to the change in capacity.

**ecosphere**

The "bio-bubble" that contains life on earth, in surface waters, and in the air.

**ecosystem**

The interacting system of a biological community and its non-living environmental surroundings.

**ECSZ**

See *Eastern California Shear Zone*.

**ectocanthic breadth**

The horizontal linear distance from the ectocanthus of the right eye to the ectocanthus of the left eye. Measured with the individual sitting or standing erect, and the facial musculature relaxed. May also be referred to as *biocular breadth* or *bicanthic diameter*.

**ectocanthus**

The junction of the most lateral parts of the upper and lower eyelids, with the eyelids open normally. May also be referred to as the *external canthus* or *lateral canthus*.

**ectocanthus to back of head**

The horizontal linear distance from ectocanthus to the back of the head. Measured with the individual standing or sitting erect and looking straight ahead, and the facial musculature relaxed. Equivalent to *ectocanthus to wall*.

**ectocanthus to otobasion**

The horizontal linear distance from ectocanthus to otobasion superior. Measured with the individual sitting or standing erect, with the facial musculature relaxed.

**ectocanthus to top of head**

The vertical linear distance from ectocanthus to the vertex level of the head. Measured with the individual standing or sitting erect, with the facial musculature relaxed.

**ectocanthus to wall**

The horizontal distance from ectocanthus to a reference wall. Measured with the individual standing erect with his/her back and head against the wall, looking straight ahead, and the facial musculature relaxed. Equivalent to *ectocanthus to back of head*.

**ectoderm**

The outermost of the three primitive germ layers of the embryo; from it are derived the epidermis and epidermic tissues, such as the nails, hair, and glands of the skin, the nervous system, external sense organs (eye, ear, etc.), and mucous membrane of the mouth and anus.

**ectomorph**

A Sheldon somatotype having characteristics of a thin, frail-appearing body build with little fat or muscle, small bones, and thin chest.

**ecuresis**

Production of absolute dehydration of the body by excessive urinary excretion in relation to the intake of water.

**ECW**

See *extracellular water*.

**eczema**

Generalized term for an inflammatory process involving the epidermis and marked by itching, weeping, and crusting.

**ED**

See *effective dose*.

**ED<sub>10</sub>**

Ten percent effective dose. Estimated dose associated with a 10% increase in response over control groups. For Hazard Ranking System purposes, the response considered is cancer. It is measured as milligrams of toxicant per kilogram body weight per day (mg/kg-day).

**ED<sub>50</sub>**

Dose in which a given effect (e.g., death, incoordination) is observed in 50 percent of exposed organisms. The effective dose for 50 percent of the exposed organisms is usually reported along with the duration of exposure (e.g., 80 hours ED<sub>50</sub>).

**EDB**

See *ethylene dibromide*.

**EDCT**

See *expected departure clearance time*.

**EDD**

See *enforcement decision document*.

**eddy**

(1) A small volume of air (or any fluid) that behaves differently from the larger flow in which it exists. (2) A current running contrary to the main current, causing water turbulence, e.g., below the bridge pier where a swift current is passing through, or below a bar or point.

**eddy above and below**

*Maritime*. Channel report term meaning that eddies should be expected both above and below the object mentioned in the marks, such as dikes, top and bottom of crossings, sunken obstructions, etc.; tricky water.

**eddy extends way out**

*Maritime*. Term meaning that an eddy extends from the shore or the dike into or across the range formed by this set of marks, or extends one-third or more across the river.

**eddy makes out from right (left) shore**

*Maritime*. Term indicating that one should watch for eddy along the shore designated in this set of marks.

**eddy viscosity**

The internal friction produced by turbulent flow. See also *molecular viscosity*.

**edema**

A condition in which body tissues contain an excessive amount of fluid. Edema can be caused by a variety of factors, including hypoproteinemia in which a lowered concentration of plasma proteins decreases the osmotic pressure, thereby permitting passage of abnormal amounts of fluid out of the blood vessels and into the tissue spaces. Some other causes are poor lymphatic drainage, increased capillary permeability (as in inflammation), and congestive heart failure. Local edema due to inflammation or poor drainage through the lymph vessels may be relieved by elevation of the part and application of cold to the area. Generalized edema is treated by the administration of diuretics, which increase the loss of certain salts and thereby increase removal of tissue fluids, which are eliminated as urine.

**EDF**

Environmental Defense Fund.

**edge lease**

One located on the edge of an oil-bearing structure.

**edit**

To manually change the data or information in a file, document, or other form of textual or graphic material.

**eductor**

See *ejector*.

**EEC**

European Economic Community.

**EEG**

See *electroencephalograph* and *electroencephalogram*.

**EEL**

See *emergency exposure limit*.

**EEO**

See *Equal Employment Opportunity*.

**effect**

That which is produced by an agent or cause; result; outcome; consequence.

**effective assistance of counsel**

The conscientious, meaningful representation wherein the accused is advised of his/her rights and honest, learned, and able counsel is given a reasonable opportunity to perform the task assigned to him/her.

**effective compliance program**

Under the Federal Sentencing Guidelines (FSGs), an organization may take advantage of mitigating factors if it has an effective program to prevent and detect violations of law. An effective program includes a minimum of seven due diligence steps which the organization must have in place to receive reduced fines at the time of an offense. The organization must generally:

1. have established compliance standards and procedures,
2. have a specific individual within high level personnel of the organization to oversee compliance with such standards and procedures,
3. use due care not to delegate substantial discretionary authority to individuals who had a propensity to engage in illegal activities,

4. take steps to communicate the above to all employees and agents,
5. take reasonable steps to achieve compliance with its standards,
6. consistently enforce standards through disciplinary mechanisms, and
7. respond appropriately to the offense and prevent further similar offenses.

The size of the organization, the likelihood that certain offenses may occur because of the nature of its business, and the prior history of the organization are relevant factors to be considered. *See also **Federal Sentencing Guidelines.***

**effective dose (ED)**

The amount of a toxicant (or drug) required to bring about a given functional change in an intact organism, at a biochemical site, or in an isolated tissue. Expressed in a proportion to the population affected (ED<sub>50</sub>, for example).

**effective intensity**

That intensity of a light in candela as defined by the Illuminating Engineering Society's Guide for Calculating the Effective Intensity of Flashing Signal Lights, November, 1964.

**effective locking device**

*Railroad.* A manually operated switch or derail which is a) vandal resistant; b) tamper resistant; and c) capable of being locked and unlocked only by the class, craft, or group of employees for whom the protection is being provided.

**effective stack height**

The sum of the actual stack height and the rise of the plume after emission from the stack.

**effective sound pressure**

The root mean square value of the pressure exerted at a given location by an acoustical waveform over a complete cycle. Also referred to as *root mean square sound pressure*, or, simply, *sound pressure*.

**effective temperature**

The combination of the dry-bulb and wet-bulb temperature of slowly moving air which produces immediate sensations of warmth and coolness. The combinations of dry-bulb and wet-bulb temperature and air movement are located on an effective temperature chart from which the effective temperature can be read.

**effective temperature index**

An arbitrary index which combines into a single value the effect of temperature, humidity, and air movement on the sensation of warmth or cold felt by the human body. A sensory index, developed by ASHRAE, of the degree of warmth that a person, stripped to the waist and engaged in light activity, would experience upon exposure to different combinations of air temperature, humidity, and air movement. This index is applicable to work situations where light activity is performed over a several-hour period. A revised effective temperature chart has been developed for sedentary type work situations, as well as one where radiant heat is a concern.

**effective thermal insulation value of clothing**

*See **total thermal insulation value of clothing.***

**effectively grounded**

As pertains to systems over 600 volts (nominal), permanently connected to earth through a ground connection of sufficiently low impedance and having sufficient ampacity that ground fault current which may occur cannot build up to voltages dangerous to personnel.

**effectiveness**

The ability to produce a specific result or to exert a specific measurable influence.

**effectus sequitur causam**

*Law (Latin).* The effect follows the cause.

**efferent**

Conveying information away from a central point, pertaining especially to neural signals.

**efferent nerve**

A collection of one or more axons which conducts signals primarily from the central nervous system to the periphery.

**efficacy**

The capacity or ability to produce the desired effect.

**efficiency**

The effectiveness of some process, usually measured with respect to the amount of output compared to energy, cost, or other measure input.

**efficient cause**

The working cause; that cause which produces effects or results. An intervening



cause, which produces results which would not have come to pass except for its interposition, and for which, therefore, the person who set in motion the original chain of causes is not responsible. That cause of an injury to which legal liability is attached.

**efficient intervening cause**

An intervening efficient cause is a new and independent force, which breaks the causal connection between the original wrong and the injury, and is the proximate and immediate cause of the injury. This means that the original negligent actor is not liable for an injury that could not have been foreseen or reasonably anticipated as the probable consequence of his/her negligent act, and would not have resulted from it had not the intervening efficient cause interrupted the natural sequence of events, turned aside their own course, and produced the injury.

**efflorescence**

A rash or eruption. Any skin lesion.

**effluent**

Wastewater, treated or untreated, that flows out of a treatment plant, sewer, or industrial outfall. Generally refers to wastes discharged into surface waters.

**effluent limitation**

Restrictions established by a state or the EPA on quantities, rates, and concentrations in wastewater discharges.

**effort**

- (1) That point of force application on a lever.
- (2) The expenditure of physical and/or mental energy in the performance of some task.

**effort arm**

That portion of a lever arm from the fulcrum to the point at which an effort is applied. Also referred to as *force arm*.

**effort-controlled cycle**

See *self-paced work*.

**effort rating**

See *performance rating*.

**effort time**

That part of the cycle time during which an employee is required to use his/her skill and effort.

**egestion**

The elimination from the body of waste products and residue of ingested nutrients.

**EGG**

See *electrogoniogram* and *electrogoniography*.

**ego**

In psychoanalytic theory, one of the three major parts of the personality, the others being the id and the superego.

**egregious policy**

OSHA's fining strategy implemented in 1990 which allowed the agency to fine employers for multiple violations of the same standard as if each were a separate and distinct violation. This allowed the assessment of huge fines against employers found to be in violation of the same requirement in several different instances (or at several different company locations) during an OSHA inspection.

**egress**

To exit from a region or space. The path or opening by which a person goes out; exit. The means or act of going out.

**EHF**

See *extremely high frequency*.

**EH&S**

Environmental Health and Safety.

**EHS**

Extremely hazardous substance.

**EIA**

See *environmental impact assessment*. See also *Energy Information Administration*.

**Eiband tolerance curve**

A graph developed from both human and animal data illustrating the likelihood and severity of injuries based on uniform acceleration of short duration (an older concept).

**eidoptometry**

A measurement of the acuteness of visual perception.

**eight hour laws**

Statutes which establish eight hours as the length of a day's work, prohibited work beyond this period, and required payment of overtime for work in excess of this period.



**Eighteenth Amendment**

The amendment to the U.S. Constitution added in 1919 which prohibited the manufacture, sale, transportation, and exportation of intoxicating liquors in all the States and Territories of the United States and which was repealed in 1933 by the Twenty-first Amendment.

**Eighth Amendment**

The amendment to the U.S. Constitution added in 1791 which prohibits excessive bail, excessive fines, and cruel and unusual punishment.

**einsteinium**

A chemical element, atomic number 99, atomic weight 254, symbol Es.

**EIS**

See *environmental impact statement*.

**ejection**

Refers to occupants being totally or partially thrown from a vehicle as a result of an impact or rollover.

**ejection seat**

A seat structure which uses rockets or explosive devices to propel a crew member from a high performance aircraft in a life-threatening, emergency situation.

**ejector**

An air-moving device employing compressed air to create a vacuum as it is passed through a venturi or straight pipe, which then induces air to flow. Often used when contaminant air could corrode a fan if it were passed through it. Ejectors are not very efficient air-moving devices but do have application in special situations. Sometimes referred to as *eductors*.

**Ekman spiral**

An idealized description of the way the wind-driven ocean currents vary with depth. In the atmosphere, it represents the way the winds vary from the surface up through the friction layer.

**El Niño**

A condition that generally develops about every eight years or so just before Christmas off the coast of Peru when the ocean water turns warm as upwelling diminishes. El Niño means "little boy" in Spanish; when capitalized, it refers to the Christ child. This innocent-sounding name originated in the 19th

century when Peruvian sailors noticed that every few years around Christmas, coastal waters warmed up and the current shifted southward. El Niño occurs when weather patterns in the tropical Pacific shift violently. Normally, strong, westward-blowing trade winds of South America push surface water toward Asia. These trade winds almost literally "pile" warm water against the coastlines of Australia, Indonesia, and the Philippines. Above the warm water, moist air rises, lowering atmospheric pressure and triggering the tropical downpours that nourish the rain forests of Asia. Meanwhile, high-altitude winds travel back toward South America. There, the now cooled air sinks, raising atmospheric pressure and suppressing rain along most of the Pacific coast, making it one of the driest regions in the world. When El Niño strikes, this pattern reverses. Atmospheric pressure in the western Pacific rises, setting the stage for drought from Australia to India. The trade winds decrease, or in extreme years, reverse to blow eastward. With no wind to push it toward Asia, some of the huge mass of warm water flows back toward South America, spawning storms from Chile to California. Meanwhile over the Pacific, towering ten-mile high thunderheads further heat the atmosphere, fueling a stronger-than-normal jet stream, which often splits into two. One branch veers north, warming the Pacific Northwest, central Canada, and Alaska. Another branch surges south, producing heavy rains in the U.S. gulf states and southwest.

**elapsed time**

The temporal interval from the beginning point of some activity to a specified or current point of that activity.

**elastic**

Susceptible of being stretched, compressed, or distorted, and then tending to assume its original shape.

**elastic limit**

The level of physical deformation beyond which damage to a structure occurs and/or the structure will not return to its original condition.

**elasticity**

The property of a material to return to its original shape after being distorted by the application of an external force.

**elastomer**

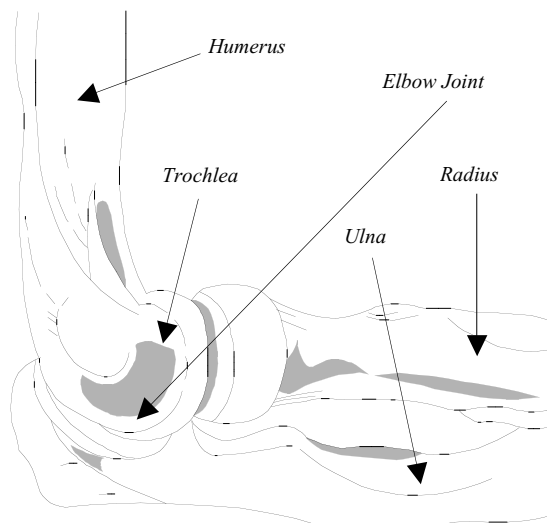
A rubber or rubber-like materials, for example, a synthetic polymer with rubber-like characteristics.

**elation**

Emotional excitement marked by the acceleration of mental and bodily activity.

**elbow**

(1) The joint between the upper arm and the forearm. It joins the large bone of the upper arm, or humerus, with the two smaller bones of the lower arm, the radius and ulna. The elbow is one of the body's most versatile joints, with a combined hinge and rotating action allowing the arm to bend and the hand to make a half turn. The flexibility of the elbow and shoulder joints together permits a nearly infinite variety of hand movements. The action of the elbow is controlled primarily by the biceps and the triceps muscles. When the biceps contracts, the arm bends at the elbow. When the triceps contracts, the arm straightens. In each action, the opposite muscle exerts a degree of opposing tension, moderating the movement so that it is smooth and even instead of sudden and jerky. The *funny bone* is not a bone but the ulnar nerve, a vulnerable and sensitive nerve that lies close to the surface near the point of the elbow. Hitting causes a tingling pain or sensation that may be felt all the way to the fingers. (2) That joint in a robotic arm capable of planar motion and corresponding by analogy to the human elbow in function.



*The human elbow and its components*

**elbow breadth**

The horizontal linear distance between the medial and lateral epicondyles of the humerus. Also referred to as *humeral breadth*. Measured with the flesh compressed, the individual standing erect, and the arms hanging naturally at the sides in the anatomical position.

**elbow circumference, flexed**

The surface distance around the flexed elbow over the olecranon prominence and through the elbow crease. Measured with the elbow flexed 90°, the shoulder flexed 90° laterally such that the upper arm is horizontal, and the hand clenched into a fist.

**elbow circumference, fully bent**

The surface distance around the olecranon prominence and the crease of the elbow. Measured with the elbow maximally flexed and the fingers extended touching the shoulder.

**elbow - elbow breadth**

The horizontal distance across the body from the lateral surface of the left elbow to the lateral surface of the right elbow. Also called *elbow-to-elbow breadth*. Measured with the individual sitting erect, the elbows flexed 90°, and resting lightly against the body.

**elbow - fingertip breadth**

See *forearm - hand length*.

**elbow - grip length**

The horizontal distance from the posterior tip of the elbow to the center of the clenched fist. Measured with the elbow flexed 90°.

**elbow height**

The vertical distance from the floor or other reference surface to the height of radiale. Also called *radiale height*. Measured with the individual standing erect and the arms hanging naturally at the sides.

**elbow rest height, sitting**

The vertical distance from the sitting surface to the bottom tip of the elbow. Also called *elbow rest height*. Measured with the individual sitting erect, the upper arm resting vertically at his/her side, and the elbow flexed 90°.

**elbow - wrist length**

The horizontal linear distance from the posterior tip of the elbow flexed 90° to the tip of

the styloid process of the radius. Measured with the individual sitting or standing erect, the upper arm vertical, and the palm facing medially.

**electoral college**

The college or body of electors of a State chosen to elect the president and vice-president; also, the whole body of such electors, composed of the electoral colleges of the several states.

**electric arc**

The visible effect of an undesired electrical discharge between two electrical connections; produces burned spots or fused metal.

**electric discharge lamp**

A source of radiant electromagnetic energy within or near the visible spectrum resulting from the passage of electrical current through one or more materials in the gaseous state.

**electric lock**

*Rail Operations.* A device to prevent or restrict the movement of a lever, a switch or a movable bridge, unless the locking member is withdrawn by an electrical device such as an electromagnet, solenoid, or motor.

**electric locking**

*Rail Operations.* The combination of one or more electric locks and controlling circuits by means of which levers of an interlocking machine, or switches or other units operated in connection with signaling and interlocking, are secured against operation under certain conditions.

**electric shock**

Effect caused by electric current passing through the body. The longer the contact with electricity, the smaller the chance of survival. The victim's breathing may stop, and his/her body may appear stiff.

**electric sign**

A fixed, stationary, or portable self-contained, electrically illuminated utilization equipment with words or symbols designed to convey information or attract attention.

**electric system**

Physically connected generation, transmission, and distribution facilities operated as an integrated unit under one central management or operating supervision.

**electric utility steam generating unit**

Under the Clean Air Act: (1) Any fossil fuel-fired combustion unit of more than 25 megawatts that serves a generator that produces electricity for sale. (2) A unit that cogenerates steam and electricity and supplies more than one-third of its potential electric output capacity and more than 25 megawatts electrical output to any utility power distribution system for sale shall be considered an electric utility steam-generating unit.

**electrical component**

A component such as a switch, fuse, resistor, wire, capacitor, or diode in an electrical system.

**electrical current**

In all Systems of Units, the basic unit of electrical current is the *ampere*, which has been defined to be that constant flow of electricity which, if maintained in two straight parallel conductors of infinite length, each having negligible circular cross-section, and placed 1.0 meter apart in a vacuum, would produce between these conductors and normal to the direction in which these conductors are positioned, a repulsive force equal to  $2 \times 10^{-7}$  newtons per meter of conductor length.

**electrical ground**

An electrical reference point or return path for current flow. Also referred to simply as *ground*.

**electrical hygrometer**

See *hygrometer*.

**electrical impedance (Z)**

The total opposition to an alternating current in an electrical circuit. Also called *impedance*.

**electrical muscle stimulation (EMS)**

The stimulation of muscles or muscle tissue with electrical current/voltage.

**electrical resistance (R)**

A measure of the opposition to electric current flow. Also called *resistance*. See also *electrical impedance*.

**electrical resistance thermometer**

Thermometer that uses electrical conducting wires (or *thermistors*) whose electrical resistance changes with the temperature. It is used in *radiosondes*.

**electrical shock**

The passage of electrical current/voltage through the body, resulting in the abnormal stimulation of muscles and nerves.

**electrical skin resistance (ESR)**

See *skin resistance response*.

**electrical stimulation**

Any form of artificial activation of nerves, muscles, or other materials by the application of electrical current/voltage.

**electricity**

A form of energy generated by friction, induction, or chemical change that is caused by the presence and motion of elementary charged particles of which matter consists. See also *gigawatt, kilowatt, and megawatt*.

**electro-pneumatic switch**

A switch operated by an electro-pneumatic switch-and-lock movement.

**electro-pneumatic valve**

A valve electrically operated which, when operated, will permit or prevent passage of air.

**electro-silence**

The absence of measurable electrical potentials in biological tissues.

**electroaffinity**

The tenacity with which the ions of an element hold their charges.

**electroanalysis**

Chemical analysis by means of electric current.

**electrobiological**

The science of the relationship between electricity and living organisms.

**electrocardiogram (ECG)**

A graphical record or other visual display of the electrical activity of the heart as recorded from various points on the body surface, usually consisting of a P wave, a QRS wave complex, and a T wave, depending on the recording locations. Often referred to as *EKG*.

**electrocardiograph**

The instrumentation used to obtain a graphical recording of heart electrical activity.



*Patient undergoing an electrocardiogram test*

**electrocardiography**

The study, measurement, recording, analysis, and/or interpretation of the electrical activity of the heart.

**electrochemical detector**

A detector that operates on the principle of electrochemical oxidation or reduction of a specific chemical in an electrolyte or galvanic cell. The electrons produced in the chemical reaction are proportional to the contaminant concentration.

**electrochemistry**

The science that deals with the use of electrical energy to bring about a chemical reaction or with the generation of electrical energy by means of chemical action.

**electrode**

Any electrically conductive device used for sensing or applying electrical current/voltage.

**electrodialysis**

A process that uses electrical current applied to permeable membranes to remove minerals from water. Often used to desalinate salty or brackish water.

**electroencephalogram (EEG)**

A graphical recording or other visual display of the electrical potentials generated by the brain and measured by electrodes attached to the scalp or implanted within the brain itself.

**electroencephalograph (EEG)**

The instrumentation used to obtain a graphical recording or the graphical recording itself of brain electrical activity.

**electroencephalography**

The study, measurement, recording, analysis, and/or interpretation of electrical activity from the brain.

**electrogoniogram (EGG)**

The electronic display or hardcopy record of changes in a joint angle using a potentiometer-equipped or other type of electrical goniometer.

**electrogoniography (EGG)**

The measurement, study, or analysis of changes in joint angles using potentiometer-equipped or other type of electrical goniometers.

**electrogoniometer**

An electromechanical goniometer, normally using changes in electrical resistance across a potentiometer to indicate the joint angle.

**electroluminescence**

The emission of light due to the application of an electromagnetic field to certain materials, and which is not due to heating effects alone.

**electrolyte**

A chemical substance that breaks down into electrically charged particles (ions) when dissolved or melted.

**electromagnetic field (EMF)**

Any combination of an electric field and a magnetic field which occur as a result of natural or artificially generated electromagnetic radiation.

**electromagnetic interference (EMI)**

A disturbance of some system due to the presence of electromagnetic fields.

**electromagnetic radiation**

A traveling wave motion resulting from changing electric or magnetic fields. The length of these waves can be relatively short (x-rays and gamma rays) or relatively long (ultra-violet, visible, and infrared through to radar and radiowaves). All electromagnetic radiation travels with the speed of light in a vacuum. Generally speaking, the shorter the wavelength, the more penetrating the radiation.

**electromagnetic spectrum**

The range of frequencies and wavelengths emitted by atomic systems. The spectrum includes radiowaves as well as the short cosmic rays.

**electromagnetic susceptibility**

Degraded performance of an instrument caused by an electromagnetic field.

**electromagnetic waves**

See *radiant energy*.

**electromyogram (EMG)**

A graphical recording or other visual display of the electrical potentials generated by a muscle, muscle group, or a large segment of muscle tissue and measured by electrodes placed in or over the tissues involved.

**electromyographic kinesiology**

The use of electromyography in the analysis of human motion. Also referred to as *correlative kinesiology*.

**electromyography (EMG)**

The study, measurement, recording, analysis, and/or interpretation of the electrical activity of muscles. Also referred to as *myography*.

**electron**

A negatively charged particle that is a fundamental constituent of all atoms. A unit of negatively charged electricity found in orbit around the nucleus of the atom. It has a negative electric charge of  $1.60210 \times 10^{-19}$  coulombs, and can exist as a constituent of an atom or in the free state (e.g., a beta particle).

**electron capture**

As pertains to ionizing radiation, a mode of radioactive decay in which an orbital electron merges with a proton in the nucleus. The process is followed by emission of an electron or photon.

**electron capture detector**

A type of detector employed in gas chromatography.

**electron microscopy**

An analytical method which utilizes a beam of electrons for the analysis of materials. This methodology is used for the identification of asbestos and other materials.

**electron volt**

A unit of energy equivalent to that gained by an electron in passing through a potential dif-

ference of 1 volt. Often expressed in large units such as keV (thousand electron volts), MeV (million electron volts), BeV (billion electron volts).

**electronystagmogram (ENG)**

A graphical recording or other visual display of the electrooculogram during nystagmus. See also *electrooculogram*.

**electrooculogram (EOG)**

A graphical display or recording of eye movements as detected by surface electrodes positioned on the skin around the eye socket, which is due to the relative orientations between the eyeball (corneo-retinal potential) and the electrodes.

**electrooculography**

The study, measurement, recording, analysis, and/or interpretation of the electrical activity associated with eye movements.

**electrophoresis**

The movement of charged particles suspended in a liquid on various media (e.g., paper, starch, agar), under the influence of an applied electric field. The method is used to analyze the plasma protein content in order to diagnose certain diseases.

**electrophysiological kinesiology**

The use of electrophysiological techniques in biomechanical and kinesiological research and training.

**electrophysiology**

The study of any form of electrical activity of the body, either associated with natural processes or due to external stimulation.

**electroretinography (ERG)**

The study, measurement, recording, analysis, and/or interpretation of the electrical potentials from the retina.

**electrostatic discharge**

A spontaneous or enticed release of static electricity.

**electrostatic precipitator (ESP)**

An air pollution control device that removes particles from a gas stream (smoke) after combustion occurs. The ESP imparts an electrical charge to the particles causing them to adhere to metal plates inside the precipitator. Rapping on the plates causes these particles to fall into a hopper for disposal.

**electrotherapy**

The use of various aspects of non-ionizing electromagnetic radiation or conduction in an attempt to heal, reduce pain, or create other beneficial effects.

**element**

(1) A pure substance that cannot be broken down into a simpler substance by chemical change but whose atoms will disintegrate in simpler particles through physical decomposition when exposed to drastic bombardment with high-energy particles. (2) A basic division of work, whether for man or machine, consisting of one or more basic, describable, and quantifiable motions or processes.

**element breakdown**

A descriptive listing of work elements, with or without certain parameters for each.

**element time**

That period of time required or allowed to perform a specified work element or other portion of a process or task.

**elemental motion**

See *therblig*.

**elements**

The forces of nature. Violent or severe weather. The ultimate undecomposable parts which unite to form anything. Popularly: fire, air, earth, and water.

**elements of crime**

Those constituent parts of a crime which must be proved by the prosecution to sustain a conviction.

**elephantiasis**

Massive subcutaneous edema, with accompanying thickening of the skin, the result of lymphatic obstruction. The disease derives its name from the symptoms, particularly swelling of the legs which makes them look like those of an elephant. The condition is usually caused by a slender, threadlike parasite, the filarial worm which enters the lymphatic system, causing an obstruction to drainage. The disease is transmitted by mosquitoes or flies which carry blood infected with filaria larva. The first visible signs are inflammation of the lymph nodes, with temporary swelling in the affected area, red streaks along the leg or arm, pain, and tenderness.



**elevated on fill**

*Rail Operations.* Rail transit way above the surface level fill. Transition segments above surface level on fill are included.

**elevated on structure**

*Rail Operations.* Rail transit way above surface level on structure. Transition segments above surface level on structures are included.

**elevated rail subway**

Includes elevated and subway trains in a city.

**elevated temperature material**

*Transit.* A material which, when offered for transportation or transported in a bulk packaging is a) in a liquid phase and at a temperature at or above 100°C (212°F); b) in a liquid phase with a flash point at or above 37.8°C (100°F) that is intentionally heated and offered for transportation or transported at or above its flash point; or c) in a solid phase and at a temperature at or above 240°C (464°F).

**eleven contiguous western states**

According to the Federal Land Policy and Management Act of 1976: Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

**Eleventh Amendment**

The Amendment to the U.S. Constitution, added in 1798, which provides that the judicial power of the U.S. shall not extend to any suit in law or equity, commenced or prosecuted against one of the United States by citizens of another State, or by citizens of any foreign state.

**ELF**

Extremely low frequency range of rf radiation (3 to 3,000 Hz). See *extremely low frequency*.

**ELF EM field**

Extremely low frequency electromagnetic field.

**eligible costs**

The construction costs for wastewater treatment works upon which EPA grants are based.

**elimination**

(1) The removal of a chemical substance from the body by metabolism or excretion. Also, the removal of health or physical hazard risk through control, substitution, or some other means. (2) Defecation or urination. (3) The reduction in the use or importance of an impaired process as proficiency in an alternate process is developed.

**Elkins Act**

Federal Act (1903) which strengthened the Interstate Commerce Act by prohibiting rebates and other forms of preferential treatment to large shippers.

**ELP**

See *Environmental Leadership Program*.

**elutriation**

Purification of a substance by dissolving it in a solvent and pouring off the solution, thus separating it from the undissolved foreign material.

**elutriator**

An air-sampling device that uses gravitational force to remove non-respirable dust from the air sample. It separates particles according to mass and aerodynamic size by maintaining laminar flow through it, thereby permitting particles of greater mass to settle out rapidly with the smaller particles depositing at greater distances from the entry point of the elutriator.

**eluviation**

The movement of soil caused by excessive water in the soil.

**ELT**

See *emergency locator transmitter*.

**emaciation**

A wasted, lean appearance due to extreme weight loss.

**embankment**

A raised structure of earth, ground, etc.

**embedded measure**

A hidden process, operation, or test which an individual completes as a subset of a regular job or task, and which is intended to provide another individual or group with information about that person's performance.

**embezzlement**

(1) The fraudulent appropriation of property by one lawfully entrusted with its possession.

(2) To "embezzle" means willfully to take, or convert to one's own use, another's money or property, of which the wrongdoer acquired possession lawfully, by reason of some office or employment or position or trust.

**embolism**

A blockage of a blood vessel by some substance.

**embolus**

A mass of undissolved material, usually part or all of a thrombus, carried in the blood stream and frequently causing obstruction of a vessel (i.e., an embolism).

**embracery**

The crime of attempting to influence a jury corruptly to one side or the other, by promises, persuasions, entreaties, entertainment, and the like. The person guilty of this offense is called an "embraceor." This is both a state and federal crime, and is commonly included under the offense of "obstructing justice."

**embryo**

(1) *Anatomy*. An organism in an early stage of development. (2) *Meteorology*. In cloud physics, a tiny ice crystal that grows in size and becomes an ice nucleus.

**embryotoxicity**

The toxic effect of a substance on the embryo.

**embryotoxin**

A material that is harmful to the developing embryo. Substances that act during pregnancy to cause adverse effects on the fetus.

**emergency**

(1) *General*. A deviation from normal operation, a structural failure, or severe environmental conditions that probably would cause harm to people or property. (2) *Department of Transportation*. Any hurricane, tornado, storm (e.g., thunderstorm, snowstorm, ice storm, blizzard, sandstorm, etc.), high water, wind-driven water, tidal wave, tsunami, earthquake, volcanic eruption, mud slide, drought, forest fire, explosion, blackout or other occurrence, natural or manmade which interrupts the delivery of essential services (such as, electricity, medical care, sewer, water, telecommunications, and telecommunication transmissions) or essential supplies (such as, food and fuel) or otherwise immediately threatens human life or public welfare, pro-

vided such hurricane, tornado, or other event results in: a) a declaration of an emergency by the President of the United States, the Governor of a State, or their authorized representatives having authority to declare emergencies; by the Regional Director of Motor Carriers for the region in which the occurrence happens; or by other Federal, State or local government officials having authority to declare emergencies, or b) a request by a police officer for tow trucks to move wrecked or disabled vehicles. (3) *Chemical*. A situation created by an accidental release or spill of hazardous chemicals which poses a threat to the safety of workers, residents, the environment, or property. (4) *Confined Spaces*. Any occurrence (including any failure of hazard control or monitoring equipment) or event internal or external to the permit space that could endanger entrants. (5) *Law*. A sudden unexpected happening; an unforeseen occurrence or condition; perplexing contingency or complication of circumstances; a sudden unexpected occasion for action; exigency; pressing necessity.

**emergency action plan**

A plan for a workplace, or parts thereof, describing what procedures the employer and employees must take to ensure employee safety from fire or other emergencies.

**emergency brake**

A mechanism designed to stop a motor vehicle after a failure of the service brake system.

**emergency brake system**

A mechanism designed to stop a vehicle after a single failure occurs in the service brake system of a part designed to contain compressed air or brake fluid or vacuum (except failure of a common valve, manifold brake fluid housing, or brake chamber housing).

**emergency button**

A type of emergency stop consisting of a pushbutton installed on or near a piece of equipment which is capable of quickly shutting off electricity to that equipment.

**emergency contingency vehicles**

Revenue vehicles placed in an inactive contingency fleet for energy or other local emergencies after the revenue vehicles have reached the end of their normal minimum useful life. The vehicles must be properly stored and maintained, and the Emergency Contin-

gency Plan must be approved by FTA. Substantial changes to the plan (10% change in fleet) require re-approval by FTA.

### **Emergency Court of Appeals**

Court created during World War II to review orders of the Price Control Administrator. It was abolished in 1953 but reestablished in 1970 under Section 211 of the Economic Stabilization Act to handle primarily wage and price control matters.

### **emergency doctrine**

Under the doctrine variously referred to as the "emergency," "imminent peril," or "sudden peril" doctrine, when one is confronted with a sudden peril requiring instinctive action, he/she is not, in determining a course of action, held to the exercise of the same degree of care as when he/she had time for reflection, and in the event that a driver of a motor vehicle suddenly meets with an emergency which naturally would overpower the judgement of a reasonably prudent and careful driver, so that momentarily he/she is thereby rendered incapable of deliberate and intelligent action, and as a result injures a third person, he/she is not negligent, provided he/she has used due care to avoid meeting such an emergency and, after it arises, exercises such care as a reasonably prudent and capable driver would use under the unusual circumstances. In an emergency situation when medical service is required for an adult who by virtue of his/her physical condition is incapable of giving consent, or with respect to a child, whose parent or other guardian is absent, and thus incapable of giving consent, the law implies the consent required to administer emergency medical services. This is a good defense to an action of tort for an alleged battery.

### **emergency episode**

*See air pollution episode.*

### **emergency escape route**

The route that employees are directed to follow in the event they are required to evacuate the workplace or seek a designated refuge area.

### **emergency exposure limit (EEL)**

The concentration of an air contaminant to which, it is believed, an individual can be exposed in an emergency without experiencing permanent adverse health effects but not nec-

essarily without experiencing temporary discomfort or other evidence of irritation or intoxication.

### **emergency lighting**

A system for providing adequate illumination automatically in the event of interruption of the normal lighting system. The emergency lighting should provide, throughout a means of egress, not less than one foot-candle of illumination for a period of one and one-half hours.

### **emergency locator transmitter (ELT)**

A radio transmitter attached to the aircraft structure which operates from its own power source on 121.5 MHz and 243.0 MHz. It aids in locating downed aircraft by radiating a downward sweeping audio tone, 2-4 times per second. It is designed to function without human action after an accident.

### **emergency mover**

A skeletal muscle which may be used to assist a prime mover when a very high force level is required.

### **emergency opening window**

*Rail.* That segment of a side-facing glazing location which has been designed to permit rapid and easy removal during a crisis situation.

### **emergency procedure**

An action plan to be implemented in the event of an emergency. It typically describes, as a minimum, roles and responsibilities, types of emergency situations to be expected, emergency notification and/or communication procedures, public relations procedures during an emergency, and any other contingency plans applicable to the facility and its processes.

### **emergency relief**

*Transit.* An operation in which a motor carrier or driver of a commercial motor vehicle is providing direct assistance to supplement state and local efforts and capabilities to save lives or property or to protect public health and safety as a result of an emergency.

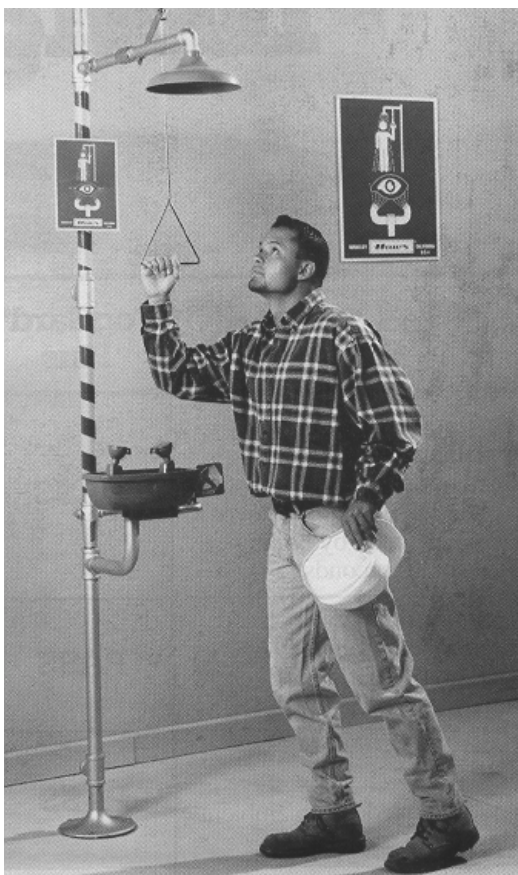
### **emergency respirator use**

The use of a respirator when a hazardous atmosphere develops suddenly and requires its immediate use for escape or for responding to the emergency in locations, areas, or opera-

tions where the hazardous situation may exist or arise.

### **Emergency Response Planning Guides (ERPG)**

Concentration ranges, developed by the American Industrial Hygiene Association (AIHA) committee, above which adverse health effects could reasonably be expected to occur if exposures exceed the time limit established for the guides. Different effects are identified for exposure periods of one hour in ERPG-1, ERPG-2, and ERPG-3.



*Emergency Shower (Drench Shower, Haws Corp., Berkeley, CA)*

### **emergency shower**

A water shower designed and located for use if an employee or other individual contacts a material that must be removed promptly in order to prevent an adverse health effect. Typically, it is recommended that such showers be capable of providing a continuous flow of deluge water for a period of not less than 15 minutes.

### **emergency stop**

(1) A pushbutton, switch, or other control device installed in or on a piece of equipment

which is capable of quickly cutting power to that equipment in an emergency. (2) A rapid cessation of the forward motion of a vehicle to avoid undesirable consequences.

### **emergency switch**

A type of emergency stop consisting of a switch located in some readily accessible position for quickly shutting down a system in an emergency.

### **emergency temporary standard (ETS)**

*See Section 6 (c) standard.*

### **emetic**

An agent that induces or causes vomiting.

### **EMF**

(1) Electromotive force. (2) Electromagnetic force. (3) *See [electromagnetic field](#)*. (4) electric and magnetic field.

### **EMG**

*See [electromyogram](#) and [electromyography](#)*.

### **EMI**

*See [electromagnetic interference](#)*.

### **eminent domain**

Government taking or forced acquisition of private land for public use, with compensation paid to the landowner. The power to take private property for public use by the state, municipalities, and private persons or corporations authorized to exercise functions of public character. In the United States, the power of eminent domain is founded in both federal (Fifth Amendment) and state constitutions. The Constitution limits the power to taking for a public purpose and prohibits the exercise of the power of eminent domain without just compensation to the owners of the property which is taken. The process of exercising the power of eminent domain is commonly referred to as "condemnation," or "expropriation."

### **emission**

Pollution discharged into the atmosphere from smokestacks, other vents, and surface areas of commercial or industrial facilities; from residential chimneys, and from motor vehicle, locomotive, or aircraft exhausts.

### **emission factor**

The relationship between the amount of pollution produced and the amount of raw material processed. For example, an emission

factor for a blast furnace making iron would be the number of pounds of particulates per ton of raw materials.

**emission inventory**

A listing, by source, of the amount of air pollutants discharged into the atmosphere of a community. It is used to establish emission standards.

**emission standard**

(1) Standards for the levels of pollutants emitted from automobiles and trucks. Congress established the first standards in the Clean Air Act of 1963. Currently, standards are set for four vehicle classes: automobiles, light trucks, heavy duty gasoline trucks, and heavy-duty diesel trucks. (2) The maximum amount of air polluting discharge legally allowed from a single source, mobile or stationary.

**emissions trading**

EPA policy that allows a plant complex with several facilities to decrease pollution from some facilities while increasing it from others, so long as total results are equal to or better than previous limits. Facilities where this is done are treated as if they exist in a bubble in which total emissions are averaged out. Complexes that reduce emissions substantially may "bank" their "credits" or sell them to other industries. Also referred to as *bubble policy*.

**emissivity**

The ratio of the radiation intensity from a surface to the radiation intensity of the same wavelength from a black body at the same temperature. The emissivity of a perfect black body is 1.

**emmetrope**

One who has normal refractive vision.

**emmetropia**

A condition of normal optical vision in which parallel light rays are brought to an accurate focus on the retina without the need for accommodation.

**emotion**

A feeling or state of mental excitement that is usually accompanied by physical changes in the body.

**emotional insanity**

The species of mental aberration produced by a violent excitement of the emotions or passions, though the reasoning faculties may remain unimpaired. A passion, effecting for a space of time, complete derangement of a person's intellect, or an impulse, which his/her mind is not able to resist, to do an act.

**empathy**

Intellectual understanding of something in another person which is foreign to oneself.

**emphasizing facts**

A jury instruction is said to emphasize facts which may contain sufficient facts to authorize a verdict, but nevertheless some fact or facts are selected from the evidence and mentioned in such a way as to indicate to the jury that they have especial importance when that is not justified.

**emphysema**

Overdistention of the alveolar sacs of the lungs. A condition of the lungs in which there is dilation of the air sacs, resulting in labored breathing and increased susceptibility to infection.

**empiric**

A practitioner in medicine or surgery, who proceeds on experience only, without science or legal qualification; a quack.

**empirical**

Derived from practical experience or relying on observations or experimental results as opposed to theory.

**empirical distribution**

A distribution of sampled events or data.

**empirical probability**

When many possible outcomes can result, including a desired outcome, the probability of occurrence of such outcomes is referred to as empirical and requires statistical evaluation to determine the likelihood of expected results based upon past performance.

**empirical workplace design**

The evolutionary design of the working environment based on a combination of human factors engineering and experience.

**empeal**

To indict; to prefer a charge against; to accuse.

**employ**

To engage in one's service; to hire; to use as an agent or substitute in transacting business; to commission and entrust with the performance of certain acts or functions or with the management of one's affairs; and, when used with respect to a servant or hired laborer, the term is equivalent to hiring, which implies a request and a contract for compensation.

**employed**

(1) Performing work under an employer-employee relationship. The term signifies both the act of doing a thing and the being under contract or orders to do it. (2) To give employment to or to have employment.

**employee**

(1) *General*. The person taking the direction from the employer. An individual who has an agreement to work for an employer and is compensated by that employer for his/her time and/or effort. (2) *Transit*. a) A driver of a commercial motor vehicle (including an independent contractor while in the course of operating a commercial motor vehicle); b) a mechanic; c) a freight handler; d) any individual who is employed by an employer and who in the course of his or her employment directly affects commercial motor vehicle safety, but such term does not include an employee of the United States, any State, any political subdivision of a State, or any agency established under a compact between States and approved by the Congress of the United States who is acting within the course of such employment; e) an individual who is compensated by the transit agency and whose expense is reported in object class 501 labor. (3) *Law*. A person in the service of another under any contract of hire, express or implied, oral or written, where the employer has the power or right to control and direct the employee in the material details of how the work is to be performed.

**Employee Aptitude Survey (EAS)**

A commonly used test for determining symbolic, verbal, and numeric reasoning abilities, word fluency and comprehension, spatial visualization, visual pursuit, speed and accuracy abilities, and manual speed and accuracy.

**employee hours**

(1) *General*. The total number of hours worked by all employees in a facility or company. May also be referred to as *exposure*

*hours*. (2) *Transit*. The number of hours worked by all employees of the railroad during the previous calendar year.

**employee human factor**

*Railroad*. Includes any of the accident causes signified by the rail equipment accident/incident cause codes listed under "Train Operation-Human Factors" in the current "Federal Railroad Administration (FRA) Guide for Preparing Accident/Incident Reports," except for Cause Code 506. *See also human factor*.

**employee not on duty**

*Railroad*. A railroad employee who is on railroad property for a purpose connected with his or her employment or with other railroad permission, but who is not en\_\_\_\_\_d in rail operations for financial or other compensation. Two classifications or categories are used: a) *Employee on duty (Class A)*: Those persons who are en\_\_\_\_\_d in the operation of a railroad. Ordinarily the fact that the employee is or is not under pay will determine whether he or she is "on duty." However, employees on railroad property while on rest or meal periods, "training time," or doing work which they are expected to do, but actually perform before pay starts, must be considered as "employees on duty." b) *Employee on duty (Class B)*: Those employees who are on railroad property for purposes connected with their employment or with other railroad permission, but who are not "on-duty" as defined above.

**employee participation team**

*See quality circles*.

**Employee Retirement Income Security Act (ERISA)**

A government regulation with the intent of guaranteeing employees' pensions if they leave a company before retirement age and that sufficient funds will exist to pay pensions when due.

**Employee Stock Ownership Plan (ESOP)**

A type of qualified profit sharing plan that invests in securities of the employer. Such plans acquire shares of the employer corporation for the benefit of employees, usually through contributions of the employer to the plan. In a contributory ESOP, the employer usually contributes its shares to a trust and re-



ceives a deduction for the fair market value of such stock. Generally, the employee recognizes no income until the stock is sold after its distribution to him/her upon retirement or other separation from service. Special tax benefits are provided to companies with such benefits.

### **employer**

(1) *General*. The person who has the authority to direct and control the activities of another. Also, the person who supervises the employee on a day to day basis is usually considered the employer. This means that temporary and part-time workers may be considered "employees." (2) *Transit*. Any person engaged in a business affecting interstate commerce who owns or leases a commercial motor vehicle in connection with that business, or assigns employees to operate it, but such terms do not include the United States, any State, any political subdivision of a State, or an agency established under a compact between States approved by the Congress of the United States. (3) *Law*. One who employs the services of others; one for whom employees work and who pays their wages or salaries. The correlative of "employee."

### **employers' liability acts**

Statutes, such as the Federal Employer's Liability Act and Workers' Compensation Acts, defining or limiting the occasions and the extent to which public and private employers shall be liable in damages (compensation) for injuries to their employees occurring in the course of their employment, and particularly abolishing the common-law rule that the employer is not liable if the injury is caused by fault or negligence of a fellow servant, and also the defenses of contributory negligence and assumption of risk.

### **employers' liability insurance**

In this form of insurance, the risk insured against is the liability of the insured to make compensation of pay damages for an accident, injury, or death occurring to a servant or other employee in the course of his/her employment, either at common law or under statutes imposing such liability on employers. It is coverage which protects the employer as to claims not covered under workers' compensation insurance. *See also insurance.*

### **employment**

The act of employing or the state of being employed. That which engages or occupies; that which consumes time and attention; also an occupation, profession, trade, post, or business.

### **employment agency**

A business operated by a person, firm, or corporation engaged in procuring, for a fee, employment for others and employees for employers. The fee may be paid by either the employer or the employee, depending upon the terms of the agreement.

### **employment at will**

This doctrine provides that, absent the express agreement to the contrary, either the employer of the employee may terminate their relationship at any time, for any reason. Such employment relationship is one which has no specific duration, and such a relationship may be terminated at will by either the employer or the employee, for or without cause. *See also at-will employment.*

### **employment contract**

An agreement or contract between employer and employee in which the terms and conditions of one's employment are provided.

### **emporiatics**

That branch of medicine particularly concerned with the health problems of travelers about the world.

### **empower**

(1) To give an individual the challenge or opportunity to show creativity, demonstrate personal responsibility, and provide quality work. (2) A grant of authority rather than a command of its exercise.

### **emptor**

*Law (Latin)*. A buyer or purchaser. Used in the maxim "caveat emptor," meaning let the buyer beware (i.e., the buyer of an article must be on guard and take the risks of his/her purchase). *See also caveat emptor.*

### **empty car mile**

*Rail Operations*. A mile run by a freight car without a load. In the case of intermodal movements, the car miles generated will be loaded or empty depending on whether the trailers/containers are moved with or without a waybill, respectively.

**empty chair doctrine**

Under this doctrine, a trial justice may charge a jury that it may infer from the litigant's unexplained failure to produce an available witness who would be expected to give material testimony in the litigant's behalf that the witness, had he/she occupied the empty chair, would have testified adversely to the litigant.

**empty field myopia**

The condition of eye accommodation for near, as opposed to far, vision when viewing a homogeneous field.

**empyema**

The presence of pus in a body cavity, particularly the presence of a purulent exudate within the pleural cavity (pyothorax). It occurs as an occasional complication of pleurisy or some other respiratory disease. Symptoms include dyspnea, coughing, chest pain on one side, malaise, and fever.

**EMS**

See *electrical muscle stimulation*.

**EMU**

See *extravehicular mobility unit*.

**emulsifier**

A surface-active agent that promotes the dispersion of one liquid in another, such as small fat globules in water.

**en route**

*Aviation*. One of three phases of flight services (terminal, en route, oceanic). En route service is provided outside of terminal airspace and is exclusive of oceanic control.

**en route air traffic control service**

Air traffic control service provided for aircraft on Instrument Flight Rules (IFR) flight plans, generally by Air Route Traffic Control Center (ARTCC), when these aircraft are operating between departure and destination terminal areas. When equipment capabilities and controller workload permit, certain advisory or assistance services may be provided to Visual Flight Rules (VFR) aircraft.

**en route center**

An Air Route Traffic Control Center.

**en route descent**

Descent from the en route cruising altitude which takes place along the route of flight.

**en route facility activity**

Total Instrument Flight Rules aircraft handled; (2 x departures) + Domestic and Oceanic overflights.

**en route high altitude charts**

Provide aeronautical information for en route instrument navigation (IFR) in the high altitude stratum. Information includes the portrayal of jet routes, identification and frequencies of radio aids, selected airports, distances, time zones, special uses airspaces, and related information.

**en route low altitude charts**

Provide aeronautical information for en route instrument navigation (IFR) in the low altitude stratum. Information includes the portrayal of airways, limits of controlled airspace, position identification and frequencies of radio aids, selected airports, minimum en route and minimum obstruction clearance altitudes, airway distances, reporting points, restricted areas, and related data. Area charts, which are a part of this series, furnish terminal data at a larger scale in congested areas.

**en route minimum safe altitude warning**

A function of the National Airspace System (NAS) Stage A en route computer that aids the controller by alerting him when a tracked aircraft is below or predicted by the computer to go below a predetermined minimum Instrument Flight Rules (IFR) altitude (MIA).

**en route spacing program**

A program designed to assist the exit sector in achieving the required in trail spacing.

**enable**

To give power to do something; to make able. In the case of a person under a disability as to dealing with another, "enable" has the primary meaning of removing that disability; not of giving a compulsory power that can be used against another person.

**Enabling Act**

A term referring to the foundation statute creating an agency and giving it jurisdiction and authority, usually also establishing some standards and procedures for it to follow. See also *enabling statute*.

**enabling clause**

That portion of a statute or constitution which gives to governmental offices the power and

authority to put it into effect and to enforce such.

**enabling statute**

Term applied to any statute enabling persons or corporations, or agencies to do what before they could not. It is applied to statutes which confer new powers. *See also Enabling Act and enabling clause.*

**enact**

To establish by law; to perform or effect; to decree. The common introductory formula in making statutory laws is "Be it enacted."

**enacting clause**

A clause at the beginning of a statute which states the authority by which it is made. That part of a statute which declares its enactment and serves to identify it as an act of legislation proceeding from the proper legislative authority.

**enactment**

The method or process by which a bill in the legislature becomes a law.

**enamel**

The calcified tissue of ectodermal origin covering the crown of a tooth.

**encapsulant**

A material that can be applied to a solid or semisolid material to prevent the release of a component(s), such as fibers from an ACM.

**encapsulation**

The process of coating an asbestos-containing material, manmade mineral fiber, lead-containing or other material from which release of a contaminant is to be controlled by the encapsulating material. An example is the coating of asbestos-containing material with a bonding or sealing agent to prevent the release of fibers.

**encephalitis**

Inflammation of the brain and the coverings (the meninges) producing persistent drowsiness, delirium, and rarely, coma. There are several different forms, a few of which are occasionally epidemic in limited areas of the United States. The epidemic forms are caused by a virus transmitted to man by the bite of mosquitoes and ticks. The condition can also occur as a rare complication of some other virus disease, and it is occasionally produced by contact with a toxic substance, such as lead.

**encephalopathy**

Any degenerative disease of the brain.

**enclosed**

Surrounded by a case, housing, fence, or walls which will prevent persons from accidentally contacting energized parts.

**enclosed structure**

A structure with a roof or ceiling and at least two walls which may present fire hazards to employees, such as accumulations of smoke, toxic gases and heat, similar to those found in buildings.

**enclosing hood**

A hood that encloses the source of contamination.

**enclosure**

(1) *General.* The case or housing of an apparatus, or the fence or walls surrounding an installation, to prevent personnel from accidentally contacting energized parts, or to protect the equipment from physical damage. (2) *Asbestos.* A tight structure around an area of asbestos-containing material to prevent the release of fibers into the surrounding area.

**encoder**

Any device for coding one or more values for use by another device or computer.

**encourage**

*Law.* In criminal law, to instigate; to incite to action; to give courage to; to inspire; to embolden; to raise confidence; to make confident; to help; to forward; to advise.

**encroach**

To enter by gradual steps or stealth into the possessions or rights of another; to trespass or intrude. To gain or intrude unlawfully upon the lands, property, or authority of another.

**encroachment**

An illegal intrusion in a highway or navigable river, with or without obstruction. An encroachment upon a street or highway is a fixture, such as a wall or fence, which illegally intrudes into or invades the highway or encloses a portion of it, diminishing its width or area, but without closing it to public travel.

**encumbrance**

Any right to, or interest in, land which may subsist in another to diminution of its value, but consistent with the passing of the fee by

conveyance. A claim, lien, charge, or liability attached to and binding real property (e.g., a mortgage, judgement lien; mechanics' lien; lease; security interest; easement or right of way; accrued and unpaid taxes). If the liability relates to a particular asset, the asset is encumbered. While encumbrances usually relate to real property, a purchaser of personal property is provided with a warranty of title against unknown encumbrances.

**end effector**

A remote mechanical latching device for gripping, holding, and/or performing work.

**end facing glazing location**

*Railroads.* With regard to safety glazing on rail car windows: Any location where a line perpendicular to the plane of the glazing material makes a horizontal angle of 50 degrees or less with the centerline of the locomotive, caboose, or passenger car. Any location which, due to curvature of the glazing material, can meet the criteria for either a front facing location or a side facing location shall be considered a front facing location.

**end item**

The final manufactured product, typically built to certain requirements or specifications.

**end plate**

(1) A specialized region of muscle cell membrane in which an axon terminates with extensive branching. Also referred to as *motor end plate*. (2) A layer of cartilage at the top and bottom of each intervertebral disk.

**end-plate potential (EPP)**

A prolonged potential change from the resting potential across the membrane of a muscle cell which may or may not result in a muscle action potential.

**end-use energy consumption**

*DOE.* (1) Primary end-use energy consumption is the sum of fossil fuel consumption by the four end-use sectors (residential, commercial, industrial, and transportation) and generation of hydroelectric power by non-electric utilities. Net end-use energy consumption includes electric utility sales to those sectors but excludes electrical system energy losses. Total end-use energy consumption includes both electric utility sales to the four end-use sectors and electrical system energy losses. (2) The sum of fossil fuel consumption by the four end-

use sectors (residential, commercial, industrial, and transportation) plus electric utility sales to those sectors and generation of hydroelectric power by non-electric utilities. Net end-use energy consumption excludes electrical system energy losses. Total end-use energy consumption includes electrical system energy losses.

**end-use sectors**

The residential, commercial, industrial, and transportation sectors of the economy.

**endangered assessment**

A study conducted to determine the nature and extent of contamination at a site on the National Priorities List and the risk posed to public health or the environment. EPA or the state conduct the study when a legal action is to be taken to direct potentially responsible parties to clean up a site or pay for the cleanup. An endangered assessment supplements a remedial investigation.

**endangered species**

Under the Federal Endangered Species Act of 1973: Any species which is in danger of extinction throughout all or a significant portion of its range other than a species of the Class Insecta determined by the Secretary of the Interior or the Secretary of Commerce to constitute a pest whose protection under the provisions of the Federal Endangered Species Act of 1973 would present an overwhelming and overriding risk to man.

**endarteritis**

Inflammation of the innermost coat of an artery.

**endeavor**

To exert physical and intellectual strength toward the attainment of an object. A systematic or continuous effort.

**endemic**

Refers to diseases or infectious agents in the human population within a given geographic area that are constantly present or usually prevalent.

**ending milestone**

*Transit.* The continuous milestone notation, to the nearest 0.01 mile that marks the end of any road or trail segment.

**endocanthic breadth**

The horizontal linear distance between the right and left endocanthi. Also referred to as *interocular breadth*.

**endocanthus**

The junction of the most medial parts of the upper and lower eyelids, with the eyelids open normally. May be referred to as *internal canthus* or *medial canthus*.

**endocarditis**

An inflammation of the inner lining membrane of the heart, usually involving the heart valves. Bacterial endocarditis is an acute or subacute, febrile, systemic disease characterized by bacterial infection of the heart valves or irregular areas on the endocardium, with the formation of bacteria-laden vegetation on these areas.

**endocardium**

The membrane lining the chambers of the heart and covering the cusps of the various valves.

**endocrine**

(1) Secreting internally. (2) Pertaining to internal secretion.

**endocrine gland**

Gland that regulates body activity by special secretions, the hormones, which are delivered directly into the blood. Each of the glands within the endocrine system has one or more specific functions, but they are all dependent upon other glands in the system for maintenance of a normal hormonal balance in the body.

**endocrinology**

The study of the glands of internal secretions.

**endogenous**

Originating within an organ or part.

**endolymph**

The fluid within the semicircular ducts, the utricle, saccule, and cochlear duct of the inner ear.

**endometriosis**

A condition in which tissue, more or less perfectly resembling the uterine mucous membrane, occurs aberrantly in various locations in the pelvic cavity. The condition may be characterized by pelvic pain, abnormal uterine or rectal bleeding, dysmenorrhea, and symptoms of pressure within the pelvic cavity. Sterility and dyspareunia also may be present.

**endometrium**

The mucous membrane lining the uterus.

**endomorph**

A Sheldon somatotype characterized generally by a soft, rounded body, with greater amounts of fatty tissue, little muscle, and an abdominal protrusion.

**endorsement**

(1) *Insurance*. An amendment to an insurance policy. (2) *Transit*. An authorization to an individual's commercial driver's license (CDL) required to permit the individual to operate certain types of commercial motor vehicles.

**endoscope**

An instrument used for direct visual inspection of hollow organs or body cavities.

**endoskeleton**

The framework of hard structures, embedded in and supporting the soft tissues of the body of higher animals, derived principally from the mesoderm.

**endospore**

A thick-walled structure formed within the cells of certain bacteria that allows the organism to withstand adverse environmental conditions, such as drying.

**endothermic**

Refers to a reaction in which the products contain more energy than the reacting materials, causing the absorption of energy as heat.

**endothoracic**

Within the thorax; situated internal to the ribs.

**endotoxin**

A heat-stable toxin that is present in the bacterial cell but not in cell-free filtrates of cultures of intact bacteria.

**endpoint**

See *breakpoint*.

**endurance**

A measure of the ability to maintain some specific level of effort, usually represented in units of time. May be referred to as *capacity*.

**enema**

(1) The introduction of fluid into the rectum. (2) A solution introduced into the rectum to promote evacuation of feces or as a means of administering nutrient or medicinal substances, anesthetics, or opaque material in roentgen examination of the lower intestinal tract.

**energy**

(1) *General*. The capacity for doing work or the amount of work done. The product of power (watts) and time duration (seconds) where one watt-second equals one joule. Forms of energy include chemical, nuclear, kinetic, and others. (2) *DOE*. The capacity for doing work as measured by the capability of doing work (potential energy) or the conversion of this capability to motion (kinetic energy). Energy has several forms, some of which are easily convertible and can be changed to another form useful for work. Most of the world's convertible energy comes from fossil fuels that are burned to produce heat that is then used as a transfer medium to mechanical or other means to accomplish tasks. Electrical energy is usually measured in kilowatt hours, while heat energy is usually measured in British Thermal Units (BTUs).

**energy average level**

A quantity calculated by taking ten times the common logarithm of the arithmetic average of the antilogs of one-tenth of each of the levels being averaged. The levels may be of any consistent type, such as maximum sound levels, sound exposure levels, and day-night sound levels.

**energy capacity**

Measured in kilowatt hours. The energy delivered by the battery, when tested at C/3 discharge rate, up to termination of discharge specified by the battery manufacturer. The required acceleration power must be delivered by the battery at any point up to 80% of the battery's energy capacity rating.

**energy consumption**

The use of energy as a source of heat or power or as an input in the manufacturing process.

**energy efficiency**

In reference to transportation, the inverse of energy intensiveness. The ratio of outputs from a process to the energy inputs, for example, miles traveled per gallon of fuel (mpg).

**energy efficient motors**

Are also known as "high-efficiency motors" and "premium motors." They are virtually interchangeable with standard motors, but differences in construction make them more energy efficient.

**energy expenditure**

*See metabolic rate.*

**energy facilities**

Under the Federal Coastal Zone Management Act of 1972: Any equipment or facility which is or will be used primarily in the exploration for, or the development, production, conversion, storage, transfer, processing, or transportation of any energy resource; or for the manufacture, production, or assembly of equipment, machinery, products, or devices which are involved in any such activity. The term includes, but is not limited to electric generating plants; petroleum refineries and associated facilities; gasification plants; facilities used for the transportation, conversion, treatment, transfer, or storage of liquefied natural gas; uranium enrichment or nuclear fuel processing facilities; oil and gas facilities, including platforms, assembly plants, storage depots, tank farms, crew and supply bases, and refining complexes; facilities including deepwater ports, for the transfer of petroleum; pipelines and transmission facilities; and terminals which are associated with any of the foregoing.

**energy flow**

Under ISO 14000, input flow to or output flow from a unit process or product system measured in units of energy.

**Energy Information Administration (EIA)**

An independent agency within the U.S. Department of Energy that develops surveys, collects energy data, and analyzes and models energy issues. The Agency must meet the requests of Congress, other elements within the Department of Energy, Federal Energy Regulatory Commission, the Executive Branch, its own independent needs, and assist the general public, or other interest groups, without taking a policy position.

**energy intensity**

In reference to transportation, the ratio of energy inputs to a process to the useful outputs from that process; for example, gallons of fuel per passenger-mile or BTU per ton mile.

**energy management**

The allocation or use of energy.



**Energy Research and Development Administration (ERDA)**

The part of the now defunct Atomic Energy Commission (AEC) that became the reactor development section and was subsequently incorporated into the Department of Energy.

**energy source**

A substance, such as petroleum, natural gas, or coal, that supplies heat or power. In Energy Information Administration reports, electricity and renewable forms of energy, such as biomass, geothermal, wind, and solar, are considered to be energy sources.

**energy summation of levels**

A quantity calculated by taking ten times the common logarithm of the sum of the antilogs of one-tenth of each of the levels being summed. The levels may be of any consistent type, such as day-night sound level or equivalent sound level.

**energy trace and barrier analysis (ETBA)**

A system safety analytical technique used to evaluate the flow of energy through a system and analyze the effectiveness of existing barriers within the system which are intended to prevent unwanted transfers of that energy flow.

**enfleshment**

The use of volumes surrounding body segments or links in human computer modeling to stimulate the presence of body tissues.

**enforcement**

(1) *Law*. The act of putting something such as a law into effect; the execution of a law; the carrying out of a mandate or command. (2) *Environmental*. EPA, state, or local actions to obtain compliance with environmental laws, rules, regulations, or agreements and/or obtain penalties or criminal sanctions for violations. Enforcement procedures may vary, depending on the specific requirements of different environmental laws and related implementing regulatory requirements.

**enforcement decision document (EDD)**

A document that provides an explanation to the public of EPA's selection of the cleanup alternatives at enforcement sites on the National Priorities List. Similar to a record of decision.

**enforcement powers**

The 13th, 14th, 15th, 19th, 23rd, 24th, and 26th Amendments to the U.S. Constitution; each contains clauses granting to Congress the power to enforce by appropriate legislation the provisions of such Amendments.

**ENG**

See *electronystagmogram*.

**engage**

To employ or involve oneself; to take part in; to embark on.

**engaged in commerce**

To be "engaged in commerce" for purposes of Fair Labor Standards Act and Federal Employers' Liability Act, an employee must be actually engaged in the movement of commerce or the services he/she performs must be so closely related thereto as to be for all practical purposes an essential part thereof, rather than an isolated local activity.

**engaged in employment**

To be rendering service for an employer under the terms of employment, and is more than being merely hired to commence work.

**engine**

A locomotive propelled by any form of energy and used by a railroad.

**engine classification**

A 2-digit numeric code identifying vehicle engines by the number of cylinders.

**engine displacement**

The volume in inches, through which the head of the piston moves, multiplied by the number of cylinders in the engine. Also known as cubic inch displacement (CID), may also be measured in liters. See also *cylinder and engine size*.

**engine retarder**

Electronic equipment which governs engine speed control.

**engine size**

The total volume within all cylinders of an engine, when pistons are at their lowest positions. The engine is usually measured in "liters" or "cubic inches of displacement (CID)." Generally, larger engines result in greater engine power, but less fuel efficiency. There are 61.024 cubic inches in a liter. See also *cylinder and engine displacement*.

**engineer**

(1) An individual qualified by education, training, and/or experience to practice in one or more fields of engineering. (2) A person responsible for operating and maintaining the power system on a vessel.

**engineered barriers**

Under the Federal Nuclear Waste Policy Act of 1982: Manmade components of the disposal system designed to prevent the release of radionuclides into the geologic medium involved. The term includes the high-level radioactive waste form, high-level radioactive waste canisters, and other materials placed over and around such canisters.

**engineered performance standard**

See *standard time*.

**engineering**

A discipline in which knowledge of the mathematical and natural sciences, gained by some combination of education, training, and practical experience, is integrated with various natural materials and forces to shape the environment.

**engineering anthropometry**

The application of anthropometric data for designing products to be used by humans. See also *human factors engineering*.

**engineering controls**

Measures taken to prevent or minimize hazard exposure through the application of controls such as improved ventilation, noise reduction techniques, chemical substitution, equipment and facility modifications, etc.

**engineering model**

A full-size structural model which is functionally identical to and dimensionally corresponds with the intended or actual final production item.

**engineering psychology**

See *human factors engineering*.

**engineering tolerance**

The maximum degree of variation permitted or allowed on a given specification, drawing, or part. Also referred to as *tolerance*, *tolerance specification*, and *tolerance limits*.

**English System**

A nearly obsolete system of measurement, used only in the United States, whose primary

units are essentially "non-metric" in nature (e.g., feet, inches, yards, miles, gallons, etc.). See also *basic units* and *English Units*.

**English Units**

The term "English" refers to the United States legislative interpretation of the units as defined in a document prepared by the National Institute of Standards and Technology (NIST), U.S. Department of Commerce, Special Publication 330. Commonly used English units in Highway Performance Monitoring System (HPMS) are miles, feet, and inches. See also *English System* and *base units*.

**engram**

A postulated neural pathway representing the trace of a memory in the brain.

**engulfment**

As pertains to confined spaces, the surrounding and effective capture of a person by a liquid or finely divided solid substance that can be aspirated to cause death by filling or plugging the respiratory system or that can exert enough force on the body to cause death by strangulation, constriction, or crushing.

**enhancement coding**

Any technique for increasing the chances that a particular item will stand out against a background. Examples include color coding, blinking, and bolding.

**enjoin**

To require; command; positively direct. To require a person, by writ of injunction, to perform, or to abstain or desist from, some act.

**enplaned passenger**

The total number of revenue passengers boarding aircraft.

**enplaned revenue tons of freight and mail**

The number of revenue tons of freight and mail loaded on an aircraft including originating and transfer tons.

**enplanement**

Domestic, territorial, and international revenue passengers who board an aircraft in the states in scheduled and non-scheduled service of aircraft in intrastate, interstate, and foreign commerce and includes intransit passengers (passengers on board international flights that transit an airport in the US for non-traffic purposes).

**enrichment**

The addition of nutrients (e.g., nitrogen, phosphorus, carbon compounds) from sewage effluent or agricultural runoff to surface water. This process greatly increases the growth potential for algae and aquatic plants.

**enrolled bill**

The final copy of a bill or joint resolution which has passed both houses of a legislature and is ready for signature. In legislative practice, a bill which has been duly introduced, finally passed by both houses, signed by the proper officers of each, approved by the governor (or president) and filed by the secretary of state.

**enter**

A user operation which signifies the end of a sequence of keystrokes or other operations and directs the computer to take action based on the content of that sequence.

**enteric**

Pertaining to the intestines.

**entering judgements**

The formal entry of the judgement on the rolls or records (e.g., civil docket) of the court, which is necessary before bringing an appeal or an action on the judgement. The entering of judgement is a ministerial act performed by the clerk of court by means of which permanent evidence of a judicial act in rendering judgement is made a record of the court.

**enteritis**

An inflammation of some portion of the intestines. A general condition that can be produced by a variety of causes. Bacteria and certain viruses may irritate the intestinal tract and produce symptoms of abdominal pain, nausea, vomiting, and diarrhea. Similar effects may result from poisonous foods such as mushrooms and berries, or from a harmful chemical present in food or drink. Enteritis may also be the consequence of overeating, alcoholic excesses, or emotional tension.

**enterocolitis**

Inflammation of the small intestine and colon.

**enteromegaly**

Enlargement of the intestines.

**enterotoxin**

(1) A toxin specific for the cells of the intestinal mucosa. (2) A toxin arising in the intes-

tine. (3) An exotoxin that is protein in nature and relatively heat-stable, produced by staphylococci and causing food poisoning.

**enterprise**

A business venture or undertaking.

**enterprise liability**

Imposition of liability upon each member in industry who manufactures or produces a product which causes injury or harm to a consumer and apportions liability of each member of industry by reference to that member's share of the market for the product.

**enthalpy**

Heat function at constant pressure. Enthalpy is sometimes also called the heat content of the system.

**entire loss of sight**

In legal terms, with respect to one eye or both, means substantial blindness, not necessarily absolute.

**entitlement**

*See apportionment.*

**entity**

(1) One of the more basic graphical elements, such as a line, arc, or circle. (2) An individual, organism, or other object having existence.

**entraining agent**

Any event, signal, or cue which is a driver for maintaining periodicity in biological rhythms. Also referred to as *Zeitgeber* and *synchronizer*.

**entrainment**

The mixing of environmental air into a pre-existing air current or cloud so that the environmental air becomes part of the current or cloud.

**entrant**

A person who has been authorized by their employer to enter a permit-required confined space.

**entrapment**

(1) *Law*. The act of officers or agents of the government in inducing a person to commit a crime not contemplated by him/her, for the purpose of instituting a criminal prosecution against him/her. (2) *Vehicle Safety*. Refers to persons being partially or completely in the vehicle and mechanically restrained by a

damaged vehicle component. Jammed doors and immobilizing injuries, by themselves, do not constitute entrapment. Occupants pinned by cargo shift are not considered to be entrapped. Occupants who are completely or partially ejected and subsequently become pinned by their own vehicle and any surface other than their own vehicle are not considered entrapped. An occupant whose seat belt buckle release mechanism is jammed as a result of a crash is not considered entrapped.

**entrepreneur**

One who, on his/her own, initiates and assumes the financial risks of a new enterprise and who undertakes its management.

**entropy**

A measure of the degree of disorder in a system, wherein every change that occurs and results in an increase of disorder is said to be a positive change in entropy. All spontaneous processes are accompanied by an increase in entropy. The internal energy of a substance that is attributed to the internal motion of the molecules.

**entrust**

To give something over to another after a relation of confidence has been established.

**entry**

(1) *Law*. The act of making or entering a record; a setting down in writing of particulars; or that which is entered; an item. (2) *Confined Spaces*. The act of passing through an opening into a confined space and the ensuing work in the space. An entry occurs when any part of the body breaks the plane of an opening of what is classified as a confined space. An alternate definition is any action resulting in any part of the face of the employee breaking the plane of any opening of a confined space as well as any ensuing work inside the space.

**entry loss**

Loss in pressure caused by air flowing into a duct or hood opening.

**entry permit**

The written authorization of the employer for entry into a confined space under defined conditions for a stated purpose during a specified time.

**entry point**

The point at which an aircraft transitions from an offshore control area to oceanic airspace.

**entry supervisor**

As pertains to confined spaces, the person (such as the employer, foreman, or crew chief) responsible for determining if acceptable entry conditions are present at a permit space where entry is planned, for authorizing entry and overseeing entry operations, and for terminating entry. An entry supervisor may also serve as an *attendant* or as an *authorized entrant*, as long as that person is trained and equipped as required by OSHA for each role he or she fills. Also, the duties of entry supervisor may be passed from one individual to another during the course of any operation.

**enumerated**

This term is often used in law as equivalent to "mentioned specifically," "designated," or "expressly named or granted," as in speaking of "enumerated" governmental powers, items of property, or articles in a tariff schedule.

**enumerated powers**

The powers specifically delegated by the Constitution to some branch or authority of the national government, and which are not denied to that government or reserved to the States or to the people. The powers specifically given to Congress are enumerated in Article I of the U.S. Constitution.

**envelope**

A specified volume as determined by some methodology or required function.

**environment**

The sum of all external conditions affecting the life, development, and survival of an organism. Includes water, air, land, and all plants and man and other animals living therein, and the interrelationships which exist among these.

**environmental anthropometry**

The measurement or study of changes in an individual's anthropometry due to his/her physical environment.

**environmental aspect**

Under ISO 14000, the element of an organization's activities, products, or services that can interact with the environment.

**environmental assessment**

A written environmental analysis which is prepared pursuant to the National Environmental Policy Act to determine whether a federal action would significantly affect the environment and thus require preparation of a more detailed environmental impact statement. Also referred to as *environmental impact assessment (EIA)*.

**environmental audit**

(1) An independent assessment of the current status of a party's compliance with applicable environmental requirements. (2) An independent evaluation of a party's environmental compliance policies, practices, and controls. (3) Auditing an organization's policies and procedures to bring industrial operations and practices into compliance with environmental laws and regulations, its permits, and any agreements with government agencies before they trigger enforcement action.

**environmental audit privilege statutes**

State legislation enacted by many states which insulates companies from abuse of their self-policing efforts. Although the statutes of the individual states do vary, generally the elements include a) documentation using Environmental Audit Report, b) immunity or reduction in penalties for voluntary disclosure, c) waiver of privilege, d) loss of privilege in certain cases, and e) a burden of proof in proving the privilege and due diligence toward compliance. *See also State Audit Immunity Statutes.*

**environmental control**

The regulation or alteration of the environment to maintain certain conditions.

**environmental due diligence**

The process used to investigate a commercial or industrial property (usually prior to completion of a real estate transaction) for contamination by hazardous wastes or hazardous substances.

**environmental factors**

Conditions other than indoor air contaminants that cause stress, comfort and/or health problems (e.g., humidity extremes, drafts, lack of air circulation, noise, and overcrowding).

**environmental fate**

Term used to describe the transport and transformation processes which occur to a chemical in the environment.

**Environmental Guidelines for Sentencing Organizations (Draft)**

A proposed Chapter 9 of the Federal Sentencing Guidelines (FSGs) for the sentencing of organizations for environmental crimes developed by the Advisory Working Group on Environmental Sanctions (March 3, 1993). Not yet adopted by the Federal Sentencing Commission.

**environmental health**

(1) The body of knowledge concerned with the prevention of disease through the control of biological, chemical, or physical agents in air, water, and food. Also concerned with the control of *environmental factors* that may have an impact on the well-being of people. (2) The activities necessary to ensure that the health of employees, customers, and the public is adequately protected from any health hazards associated with a company's operations.

**environmental impact**

Under ISO 14000, any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organization's activities, products, or services.

**environmental impact assessment (EIA)**

A report prepared by an applicant for a discharge permit which identifies and analyzes the impact of a new source of emission to the environment and discusses possible alternatives.

**environmental impact statement (EIS)**

A document required of federal agencies by the National Environmental Policy Act for major projects or legislative proposals significantly affecting the environment. A tool for decision making, it describes the positive and negative effects of the undertaking and lists alternative actions.

**environmental impairment liability**

A type of insurance coverage carried by hazardous waste generators and others involved in hazardous waste handling and disposal. The coverage typically provides funds for remediating environmental impairment or paying for damages resulting from the impairment. Not all such insurance policies include the same types of coverage; however, some have specific exclusion for certain types of occurrences or releases.

**environmental inputs**

The economic, social, psychological, managerial, mechanical, and climatic variables which cause an individual to respond, either physiologically or behaviorally.

**environmental labeling or declaration**

A tool of environmental management which is a claim indicating the environmental aspects of a product or service that may take the form of statements, symbols, or graphics on product or package labels, product literature, technical bulletins, advertising, publicity, etc. An element of ISO 14000.

**environmental lapse rate**

The distribution of the temperature vertically. It is most often measured with a radiosonde. Also called the *lapse rate*.

**environmental leadership program (ELP)**

An EPA positive incentives program which earns a company a degree of trust by that agency and public recognition once the company has met the very highest standards of compliance. Applicant companies must be held to a high standard of performance at the time of entry into the program and must have addressed any outstanding problems with either state or federal officials. The company's own internal self-evaluation system would serve as evidence of its continuous compliance. *See also carrot and stick approach and positive incentives.*

**environmental monitoring**

The systematic collection, analysis, and evaluation of environmental samples, such as from air, to determine the contaminant levels to which workers are exposed.

**environmental noise**

Under the Federal Noise Control Act of 1972, the intensity, duration, and the character of sounds from all sources.

**environmental objective**

Under ISO 14000, the overall environmental goal, arising from the environmental policy, that an organization sets itself to achieve, and which is quantified where practicable.

**environmental performance**

Under ISO 14000, the measurable results of the environmental management system, related to an organization's control of its envi-

ronmental aspects, based on its environmental policy, objectives, and targets.

**environmental policy**

Under ISO 14000, a statement by an organization of its intentions and principles in relation to its overall environmental performance which provides a framework for action and for setting of its environmental objectives and targets.

**Environmental Protection Agency (EPA)**

Established in 1970 by Presidential Executive Order (President Nixon), the EPA is the primary federal agency charged with ensuring the protection and preservation of environmental resources in the United States. It is responsible for pollution control and abatement, including programs for air, water, pollution, solid and toxic waste, pesticide, control, noise abatement, and other pollution sources and concerns.

**Environmental Protection Agency Certification Files**

Computer files produced by Environmental Protection Agency (EPA) for analysis purposes. For each vehicle make, model and year, the files contain the EPA test Miles Per Gallon (MPG) (city, highway, and 55/45 composite). These MPGs are associated with various combinations of engine and drivetrain technologies (e.g., number of cylinders, engine size, gasoline or diesel fuel, and automatic or manual transmission). These files also contain information similar to that in the Department of Energy (DOE)/EPA Gas Mileage Guide, although the MPGs in that publication are adjusted for shortfall.

**Environmental Protection Agency Composite Mile Per Gallon (MPG)**

The harmonic mean of the Environmental Protection Agency (EPA) city and highway MPG, weighted under the assumption of 55 percent city driving and 45 percent highway driving.

**environmental response team**

EPA experts located in Edison, New Jersey and Cincinnati, Ohio who can provide around-the-clock technical assistance to EPA regional offices and states during all types of emergencies involving hazardous waste sites and spills of hazardous substances.



**environmental restoration**

Restitution for the loss, damage, or destruction of natural resources arising out of the accidental discharge, dispersal, release, or escape into or upon the land, atmosphere, watercourse, or body of water of any commodity transported by a motor carrier. This shall include the cost of removal and the cost of necessary measures taken to minimize or mitigate damage to human health, the natural environment, fish, shellfish, and wildlife.

**environmental risk**

The probability of a human health effect resulting from some environmental state or circumstance.

**environmental sampling**

The taking of samples from the environment for analysis. Also called *sampling*. See also [environmental monitoring](#).

**environmental stressor**

Any condition in the environment which produces stress in an organism, whether climatological, biological, chemical, mechanical, or particulate. Also referred to as *ecological stress vector*.

**environmental target**

Under ISO 14000, the detailed performance requirement, quantified where practicable, applicable to the organization or parts thereof, that arises from the environmental objectives and that needs to be set and met to achieve those objectives.

**environmentally sensitive area**

An area of environmental importance which is in or adjacent to navigable waters.

**enzyme**

An organic compound, frequently a protein, that accelerates (catalyzes) specific transformations of material, as in the digestion of foods.

**EOG**

See [electrooculogram](#).

**E. P. Tox**

EP Toxicity or Extraction Procedure Toxicity; an analytical laboratory characterization using extraction procedures for determining primarily toxic metal concentrations and/or leaching potential. Recently updated as a series of combined tests now called *TCLP* or *toxicity characterization leaching procedure*.

**EPA**

See [Environmental Protection Agency](#).

**EPCRA**

Emergency Planning and Community Right-to-Know Act of 1986 (Federal). It is Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986.

**ephedrine**

An alkaloid obtained from the shrub *Ephedra equisetina* or produced synthetically; used, in the form of ephedrine hydrochloride or ephedrine sulfate, as a sympathomimetic, as a pressor substance, to relieve bronchial spasm and as a central nervous system stimulant. It may be administered orally, topically, intramuscularly, or intravenously.

**epicardia**

The lower portion of the esophagus, extending from the esophageal hiatus to the cardia, the upper orifice of the stomach.

**epicardium**

The layer of the pericardium that is in contact with the heart.

**epicenter**

The point on the earth's surface directly above the (subterranean) point of origin (the *hypocenter*) of an earthquake. Only two measurements, latitude and longitude, are need to locate it.

**epicondyle**

A bony protrusion at the distal end of bones such as the humerus, radius, and femur.

**epicondylitis**

A cumulative trauma disorder (CTD) characterized by inflammation or infection in the general area of the elbow, such as tennis elbow.

**epidemic**

The occurrence of cases that are of similar nature in human populations in a particular geographic area and that are clearly in excess of the usual incidence.

**epidemiologist**

A person who applies epidemiological principles and methods to the prevention and control of diseases.

**epidemiology**

The study of the distribution and determinants of disease causation in human populations.

Examines the frequency of occurrence and distribution of a disease throughout a population, often with the purpose of determining the cause. To the industrial hygienist, it is the determination of statistically significant relationships of specific diseases of specific organs of the human body in selected organs of the human body in selected occupational groups (cohorts) in comparison with selected controls.

**epidermis**

The outer, non-vascular, non-sensitive layer of the skin that covers the *true skin*.

**epiglottis**

A large piece of cartilage at the top of the larynx which closes the tracheal entrance when swallowing to prevent food from entering.

**epilation**

The removal of hair by the roots. Loss of body hair.

**epilepsy**

A disruption of the normal rhythm of the brain. An occasional, periodic, excessive and disorderly discharge of nerve cells in the brain. The discharge is chemical-electrical in nature. While the discharge itself is hidden, it manifests itself in various forms of visible activity called seizures. The type of seizures will vary according to the location of the discharge in the brain, and the spread of the charges from cell to cell. In many cases, seizures are so mild (a brief twitch, a momentary attention loss) that they are not recognized. Even when they are, they have a minimal effect. A major convulsion which the public tends to associate immediately with epilepsy is only one of a number of seizure types.

**epinephrine**

A catecholamine which may act as a neurotransmitter or hormone, depending on the location and source. More commonly referred to as *adrenaline*.

**epiphyseal separation**

Not a bone fracture in true sense, but a separation of the fibers and cartilaginous tissues which attach the epiphysis to the femur.

**epiphyseitis**

Inflammation of an epiphysis (a process of bone attached for a time to another bone by cartilage).

**epiphysis**

The region at the end of a long bone having an expanded cross-section.

**episode**

(1) *Epilepsy*. With regard to grand mal epilepsy, a seizure event. (2) *Air Pollution*. An incident within a given region as a result of a significant concentration of an air pollutant with meteorological conditions such that the concentration may persist and possibly increase with the likelihood that there will be a significant increase in illnesses and possibly deaths, particularly among those who have a preexisting condition that may be aggravated by the pollutant.

**epistaxis**

Hemorrhage from the nose; a nosebleed.

**epithelial**

Pertaining to or comprised of epithelium.

**epithelioma**

Tumor derived from epithelium.

**epithelium**

Refers to cells that line all canals and surfaces that have contact with external air, and also cells that are specialized for secretion in certain organs such as the liver and kidneys.

**eponychium**

The thin layer of tissue which overlaps the lunula at the base of a fingernail or toenail.

**EPP**

See *end-plate potential*.

**EPRI**

Electric Power Research Institute.

**EP toxic waste**

A waste with certain toxic substances present at levels greater than limits specified by regulation.

**Equal Access to Justice Act**

This 1980 Act entitles certain prevailing parties to recover attorney and expert witness fees, and other expenses, in actions involving the United States, unless the government action was substantially justified.

**Equal Employment Opportunity (EEO)**

A series of government regulations intended to prevent discrimination in hiring, firing, and promotion of minorities and women.

### **Equal Employment Opportunity Commission (EEOC)**

The EEOC was created by Title VII of the Civil Rights Act of 1964 (78 Stat. 241; 42 U.S.C.A. § 2000a), and became operational July 2, 1965. The purposes of the Commission are to end discrimination based on race, color, religion, age, sex, or national origin in hiring, promotion, firing, wages, testing, training, apprenticeship, and all other conditions of employment; and to promote voluntary action programs by employers, unions, and community organizations to put equal employment opportunity into actual operation.

### **equal-energy white point**

See *achromatic point*.

### **equal-interval scale**

A measurement scale which meets the criteria for an ordinal scale and which items can be classified by value on a linear magnitude measure, with equal distances between measures, but providing no information as to the absoluteness of the magnitudes. May be referred to as *interval scale*.

### **Equal Pay Act**

Federal law which mandates the same pay for all persons who do the same work without regard to sex, age, etc. For work to be "equal" within the meaning of the Act, it is not necessary that the jobs be identical but only that they be substantially equal.

### **equal protection clause**

That provision in the 14th Amendment to the U.S. Constitution which prohibits a state from denying to any person within its jurisdiction the equal protection of the laws. This clause requires that persons under like circumstances be given equal protection in the enjoyment of personal rights and the prevention and redress of wrongs.

### **equal protection of the law**

The constitutional guarantee of "equal protection of the laws" means that no person or class of persons shall be denied the same protection of the laws which is enjoyed by other persons or other classes in like circumstances in their lives, liberty, property, and in their pursuit of happiness.

### **equalizing reservoir**

*Rail*. An air reservoir connected with and adding volume to the top portion of the equalizing piston chamber of the automatic brake valve, to provide uniform service reductions in brake pipe pressure regardless of the length of the train.

### **equilibrium**

(1) *Physiology*. A state in which the body maintains desired posture or retains control in body movement through continuous sensory monitoring and the balancing of muscle tensions. See also *static equilibrium* and *dynamic equilibrium*. (2) *Radiation*. The state at which the radioactivity of consecutive elements within a radioactive series is neither increasing nor decreasing.

### **equilibrium vapor pressure**

The necessary vapor pressure around liquid water that allows the water to remain in equilibrium with its environment. Also called *saturation vapor pressure*.

### **equinoxes**

The two periods of the year (vernal equinox about March 21st, and the autumnal equinox about September 22nd) when the time from the rising of the sun to its setting is equal to the time from its setting to its rising.

### **equinus**

A deformity where the foot is continuously plantar-flexed.

### **equipment**

A general term including material, fittings, devices, appliances, fixtures, apparatus, and the like, used as a part of, or in connection with, an electrical installation.

### **equipment code**

*Transit*. A six-digit numeric code used to classify equipment by its usage characteristics (passenger carrying, cargo hauling, etc.), gross weight rating, and equipment configuration (panel truck, pick-up, stake body, dump etc.).

### **equipment consist**

*Rail*. An equipment consist is a train, locomotive(s), cut of cars, or a single car not coupled to another car or locomotive.

### **equipment damage**

*Rail*. All costs, including labor and material, associated with the repair or replacement-in-

kind of on-track rail equipment. Trailers and/or container on flat cars are considered to be lading and damage to these is not to be included in on-track equipment damage. Damage to a flat car carrying a trailer/container is to be included in reportable damage.

**equipment-type flow process chart**

A flow process chart which provides a plan or usage record for equipment.

**equity**

A legal doctrine which emphasizes fairness as opposed to law in resolving disputes. Sometimes referred to as *balancing of equities*; for instance, when a court decides whether or not to issue an injunction.

**equivalent airspeed**

The calibrated airspeed of an aircraft corrected for adiabatic compressible flow for the particular altitude. Equivalent airspeed is equal to calibrated airspeed in standard atmosphere at sea level.

**equivalent diameter**

See *aerodynamic diameter*.

**equivalent form**

Any of two or more forms of some test which are very similar in content and difficulty and which are expected to yield similar means and variability for a given group.

**equivalent groups method**

See *matched groups design*.

**equivalent mean luminance**

The transformed luminance output by a flickering light compared to an equivalent steady light.

**equivalent method**

Any method of sampling or analyzing for air pollution which has been demonstrated to the EPA Administrator's satisfaction to be, under specific conditions, an acceptable alternative to the normally used reference methods.

**equivalent sound level**

The level, in decibels, of the mean-square A-weighted sound pressure during a stated time period, with reference to the square of the standard reference sound pressure of 20 micropascals. It is the level of the sound exposure divided by the time period and is abbreviated as  $L_{eq}$ .

**equivalent weight**

The weight of an element that combines chemically with 8 grams of oxygen or its equivalent.

**erbium**

A chemical element, atomic number 68, atomic weight 167.26, symbol Er.

**ERDA**

See *Energy Research and Development Administration*.

**erect**

Pertaining to a standing posture in which the individual's shoulders are back and the neck is fully extended.

**erg**

A unit of work equal to the force of one dyne acting through a distance of one centimeter.

**ERG**

See *electroretinography*.

**ergograph (Kelso-Hellebrandt)**

A device used for measuring muscle work output in a series of repetitive movements.

**ergometer**

Any device which permits some determination of the work performed by an individual over a period of time.

**ergonomics**

See *physiological work measurement*.

**ergonomic analysis**

See *human factors analysis*.

**ergonomic design of jobs**

See *job design*.

**ergonomic job analysis**

See *human factors analysis*.

**ergonomic lifting calculator**

A sliding rule device distributed by the National Safety Council for determining whether or not a lifting task is acceptable.

**ergonomics**

A multi-disciplinary activity that concentrates on the interactions between the human and their total working environment with consideration for the stressors that may be present in that environment such as atmospheric heat, illumination, and sound as well as all the tools and equipment used in the work place. Also referred to as *human factors* and *human factors engineering*.

**ergonomist**

An individual trained in health, behavioral, and technological sciences and who is competent to apply those fields to the industrial environment to reduce stress on personnel and thereby prevent work strain from developing to pathological levels or producing fatigue, careless workmanship, or high employee turnover.

**ERISA**

See *Employee Retirement Income Security Act*.

**Erlanger-Gasser classification**

A method for classifying motor neurons, based on conduction velocity, into three primary groups: A, B, and C, with the A group being further divided into four subgroups:  $\alpha$ ,  $\beta$ ,  $\gamma$ , and  $\delta$ .

**ERMAC**

Electromagnetic Radiation Management Advisory Council.

**erosion**

The wearing away of land surface by wind or water. Erosion occurs naturally from weather or runoff but can be intensified by land-clearing practices related to farming, residential or industrial development, road building, or timber-cutting.

**ERPG**

See *Emergency Response Planning Guides*.

**erroneous**

Involving error; deviating from the law. This term is not generally used as designating a corrupt or evil act.

**erroneous judgement**

One rendered according to course and practice of court, but contrary to law, upon mistaken view of law, or upon erroneous application of legal principles.

**error**

(1) The difference between the true or actual value to be measured and the value to be measured and the value indicated by the measuring system. Any deviation of an observed value from the true value. (2) An inappropriate response by a system, whether of commission, omission, inadequacy, or timing. (3) A mistaken judgment or incorrect belief as to the existence or effect of matters of fact, or

a false or mistaken conception or application of the law.

**error in exercise of jurisdiction**

Error in determination of questions of law or fact on which the court's jurisdiction in a particular case depends.

**error in fact**

Error in fact occurs when, by reason of some fact which is unknown to the court and not apparent on the record (e.g., infancy, or death of one of the parties), it renders a judgement void. Such occurs when some fact which really exists is unknown, or some fact is supposed to exist which really does not.

**error in law**

An error of the court in applying the law to the case on trial (e.g., in ruling on the admission of evidence, or in charging the jury).

**error rate**

The number of errors per division, in which the division may be time, number of products output, motions, or other quantifiable variable.

**errors and omissions (O&E) insurance**

A type of insurance that indemnifies the insured for any loss sustained because of an error or oversight on his/her part. See also *insurance*.

**ERV**

See *expiratory reserve volume*.

**erysipelas**

An inflammation of the skin marked by red patches with sharp border lines, usually due to Group A hemolytic streptococci. The visible symptoms or erysipelas, a form of cellulitis, are round or oval patches on the skin that promptly enlarge and spread, becoming swollen, tender, and red. The affected skin is hot to the touch, and, occasionally, the adjacent skin blisters. Headache, vomiting, fever, and sometimes complete prostration can occur.

**erythema**

A abnormal redness of the skin, due to distention of the capillaries with the blood. It can be caused by a various agents such as heat, certain drugs, ultraviolet rays, and ionizing radiation.

**erythematous region**

The electromagnetic spectrum in the ultraviolet region from 2800 angstroms to 3200 angstroms.

**erythematous threshold**

That level at which erythema becomes apparent. Also referred to as *minimal perceptible erythema*.

**erythroderma**

A chronic infection of the skin, marked by the development of red or brownish patches on the inner side of the thigh, on the scrotum, and in the axilla.

**erythroblastemia**

The presence in the peripheral blood of abnormally large numbers of nucleated red cells.

**erythrocyte**

A red blood cell which contains hemoglobin and transports oxygen to body tissues.

**erythromycin**

An antibiotic obtained from *Streptomyces erythreus*. It is effective against a wide variety of organisms, including gram-negative and gram-positive bacteria and many rickettsial and viral infectious agents. It may be administered orally or parenterally.

**escalator clause**

(1) In *union contracts*, a provision that wages will rise or fall depending on some standard like the cost of living index. (2) In a *lease*, a provision that rent may be increased to reflect an increase in real estate taxes, operating costs, and even increases in Consumer Price Index. (3) In *construction contracts*, a clause authorizing a contractor to increase his/her contract price should costs of labor or materials increase.

**escape clause**

A provision in a contract, insurance policy, or other legal document permitting a party or parties to avoid liability or performance under certain conditions.

**eschar**

Damage created to the skin and underlying tissue from a burn or as a result of contact with a corrosive material.

**esophagus**

That portion of the digestive system composed of the passageway extending from the

lower part of the pharynx to the stomach. The hollow muscular tube extending from the pharynx to the stomach, consisting of an outer fibrous coat, a muscular layer, a submucous layer and an inner mucous membrane. The junction between the stomach and esophagus is closed by a muscular ring known as the cardiac sphincter, which opens to allow the passage of food into the stomach. In an adult the esophagus is usually 10 to 12 inches long.

**esophoria**

A condition in which the eyes tend to turn inward, preventing binocular vision.

**ESP**

See *electrostatic precipitator*.

**ESR**

Electrical skin resistance. See *skin resistance response*.

**EST**

See *ex-ship's tackle*.

**establishment**

(1) *According to OSHA*: a) A single physical location where business is conducted or where services or industrial operations are performed. Examples include a factory, mill, store, hotel, restaurant, movie theater, farm, ranch, bank, sales office, warehouse, or central administrative office. When distinctly separate activities are performed at a single physical location (such as contract construction activities operated from the same physical location as a lumber yard, each activity shall be treated as a separate establishment. b) For firms engaged in activities such as agriculture, construction, transportation, communications, and electric, gas, and sanitary services, which may be physically dispersed, records may be maintained at a place to which employees report each day. c) Records of personnel who do not primarily report or work at a single establishment, and who are generally not supervised in their daily work, such as traveling sales personnel, technicians, and engineers, shall be maintained at the location from which they are paid or the base from which personnel operate to carry out their activities. (2) *According to FRA*: A single physical location where business is conducted or where services or industrial operations are performed. Examples of railroad establishments include, but are not limited to



an operating division, general office, and a major installation such as a locomotive or car repair or construction facility. For employees who are engaged in dispersed operations, such as track maintenance workers, the "establishment" is the location where these employees report for work assignments. (3) *Law*. An institution or place of business, with its fixtures and organized staff.

**establishment list**

A list that contains the names of particular plants located within the territorial jurisdiction of the local OSHA Area Office that are of the types of industries that have been noted on the industry rank report. *See also industry rank report*.

**esthesiometer**

An instrument for measuring touch sensitivity.

**esthetic**

Pertaining to the senses, especially when pleasuring to the senses.

**estimate ratio**

The ratio of two population aggregates (totals). For example, "average miles traveled per vehicle" is the ratio of total miles driven by all vehicles, over the total number of vehicles, within any subgroup. There are two types of ratio estimates; those computed using aggregates for vehicles and those computed using aggregates for households. Also referred to as *aggregate ratio*. *See also mean and ratio estimate*.

**estimated arrival time**

The time the flight is estimated to arrive at the gate (scheduled operators) or the actual runway on times for nonscheduled operators.

**estimated elapsed time**

The estimated time required to proceed from one significant point to another.

**estimated en route time**

*Aviation*. The estimated flying time from departure point to destination liftoff to touch-down).

**estrogen**

(1) An estrus-producing substance. (2) A general name for the principal female sex hormones. These hormones are manufactured in the ovaries and, though each has a slightly different function, they are closely

related and are usually referred to collectively as estrogen.

**estuarine sanctuary**

A research area which may include any part or all of an estuary and any island, transitional area, and upland in, adjoining, or adjacent to such estuary, and which constitutes to the extent feasible a natural unit, set aside to provide scientists and students the opportunity to examine over a period of time the ecological relationships within the area.

**estuary**

(1) That part of a river or stream or other body of water having unimpaired connection with the open sea, where the sea water is measurably diluted with fresh water derived from land drainage. The term includes estuary-type areas of the Great Lakes and the Chesapeake Bay. (2) Associated aquatic ecosystems and those portions of tributaries draining into the estuary up to the historic height of migration of anadromous fish or the historic head of tidal influence, whichever is higher.

**ET**

Effective temperature.

**ETA**

*See explosive transfer assembly*. Also, an acronym for estimated time of arrival.

**ETBA**

*See energy trace and barrier analysis*.

**ethanol**

Otherwise known as ethyl alcohol, alcohol, or grain-spirit. A clear, colorless, flammable oxygenated hydrocarbon with a boiling point of 78.5°C in the anhydrous state. In transportation, ethanol is used as a vehicle fuel by itself (E100), blended with gasoline (E85), or as a gasoline octane enhancer and oxygenate (10% concentration).

**Ethernet**

*Computing*. A software protocol for building networks.

**ethics**

That moral code practiced by an individual or groups, typically referring to a moral code involving honesty, integrity, and other qualities generally judged to be good.

**ethmocarditis**

Inflammation of the connective tissue of the heart.

**ethmoid bone**

A relatively complex, irregularly shaped bone within the anterior medial region of the skull behind the nose.

**ethnic group**

A group of people who either maintains affiliation due to strong racial and/or cultural ties or is descended from a certain race or culture.

**ethylene dibromide (EDB)**

A chemical used as an agricultural fumigant and in certain industrial processes. Extremely toxic and found to be a carcinogen in laboratory animals, EDB has been banned for most agricultural uses in the United States.

**ethylenediamine**

A volatile, colorless liquid with an ammonia odor that is used as a solvent and in organic synthesis.

**etiologic agents**

Infectious microorganisms, viruses, or parasitic agents capable of producing infection and/or disease in a susceptible host.

**etiology**

The study or theory of the causation of disease; the sum of knowledge regarding disease causes.

**ETS**

Emergency temporary standard. See *Section 6(c) standard*.

**euphoria**

The absence of pain or distress. An exaggerated sense of well-being.

**eustachian tube**

A hollow, tubular structure connecting the middle ear with the nasal/oral cavity.

**eutrophic lakes**

Shallow, murky bodies of water that have excessive concentrations of plant nutrients causing excessive algae production. An increase in mineral and organic nutrients reduces the dissolved oxygen, producing an environment that favors plant over animal life.

**eutrophication**

The slow aging process during which a lake, estuary, or bay evolves into a bog or marsh and eventually disappears. During the later stages of eutrophication, the water body is choked by abundant plant life as the result of

increased amounts of nutritive compounds such as nitrogen and phosphorus. Human activities can accelerate the process.

**EVA**

See *extravehicular activity*.

**evaporation**

The change of a substance from the solid or liquid phase to the gaseous or vapor phase.

**evaporation fog**

Fog produced when sufficient water vapor is added to the air by evaporation. The two common types are *steam fog*, which forms when cold air moves over warm water, and *frontal fog*, which forms as warm raindrops evaporate in a cool air mass.

**evaporation ponds**

Areas where sewer sludge is dumped and allowed to dry out.

**evaporation rate**

The rate at which a material will vaporize (evaporate) as compared to the known rate of a standard material (such as normal-butyl acetate). It is the ratio of the time required to evaporate a measured amount of a liquid to the time required to evaporate the same amount of a reference liquid under ideal test condition. Normal-butyl acetate has typically been used as the reference standard.

**evaporative heat loss**

The dissipation of body heat through perspiration, indicated by an equation of the form:

$$H = kA(P_s - P_a)$$

where:

$H$  = evaporative heat loss

$k$  = evaporative coefficient

$A$  = body surface area

$P_s$  = saturated vapor pressure of water at skin temperature

$P_a$  = ambient water vapor pressure

**evaporative heat transfer coefficient**

The value of the ratio of the permeability index to the total thermal insulation value of clothing. Also referred to as *coefficient of evaporative heat transfer* and *evaporative transmissibility*.

**evapotranspiration**

The loss of water from the soil both by evaporation and by transpiration from the plants growing in the soil.

**evasé**

A gradual enlargement at the outlet of an exhaust system to reduce the air discharge velocity efficiently so that velocity pressure can be regained instead of being wasted as occurs when air is discharged directly from a fan housing.

**evasive answer**

One which consists of refusing either to admit or to deny a matter in a direct, straightforward manner as to which the person is necessarily presumed to have knowledge. An evasive answer is considered and treated as a failure to answer, for which a party may on motion seek a court compelling answers to discovery questions.

**evening person**

Slang term for an individual who generally likes to go to sleep late at night, likes to sleep late, and has trouble waking early in the morning.

**evening shift**

See *second shift*.

**event**

- (1) A collection of one or more sample points.
- (2) The consequence of anything; the issue or outcome of an action as finally determined.

**event recorder**

*Rail Operations.* A device, designed to resist tampering, that monitors and records data on train speed, direction of motion, time, distance, throttle position, brake applications and operations (including train brake, independent brake, and, if so equipped, dynamic brake applications and operations) and, where the locomotive is so equipped, cab signal aspect(s), over the most recent 48 hours of operation of the electrical system of the locomotive on which it is installed.

**event tree**

A graphic depiction of system or operational events as they are related to the top event or failure condition.

**event tree analysis**

A system safety analysis method, similar to fault tree analysis, used to examine different system or operational responses to various positive or negative conditions which occur during system operation.

**eversion**

A turning of the bottom of the foot outward such that the more sagittal portions are also elevated slightly.

**evertor**

Any muscle which is involved in eversion of the foot.

**evidence**

Any species of proof, or probative matter, legally presented at the trial of an issue, by the act of the parties and through the media of witnesses, records, documents, exhibits, concrete objects, etc. for the purpose of inducing belief in the minds of the court or jury as to their contention.

**evidence by inspection**

Such evidence as is addressed directly to the senses without intervention of testimony. Tangible, physical evidence.

**evidence codes**

Statutory provisions governing admissibility of evidence and burden of proof at hearings and trials.

**evidence rules**

Rules which govern the admissibility of evidence at hearing and trials (e.g., Federal Rules of Evidence, Uniform Rules of Evidence).

**evoked potential (EP)**

An electrophysiological response recorded from the brain or scalp which is time-linked to peripheral sensory stimulation. Synonymous with *evoked response*.

**evoked response**

See *evoked potential*.

**ex quay**

*Maritime.* The seller makes the goods available to the buyer on the quay (wharf) at the destination named in the sales contract. The seller has to bear the full cost and risk involved in bringing the goods there.

**ex ship**

*Maritime.* The seller will make the goods available to the buyer on board the ship at the destination named in the sales contract. The seller bears all costs and risks involved in bringing the goods to the destination.

**ex ship's tackle (EST)**

*Maritime.* Similar to Cost, Insurance and Freight, but seller is responsible for loss and

damage until goods are delivered on dock at port of destination. Seller has to insure goods up to this point. Also called *ex ship*.

**ex warehouse**

Buyer is responsible for all charges to destination and has to arrange insurance to cover the goods from the time they leave the warehouse at the place of shipment until their arrival at final destination. Also called *ex works*.

**ex works**

See *ex warehouse*.

**exa**

Prefix indicating 1 E+18.

**examine (E)**

A mental basic work element involving examination of a part or product.

**exceedance**

Violation of environmental protection standards by exceeding allowable limits or concentration levels.

**excess**

Any property under the control of a federal Agency which that agency determines is not required for its needs or for the discharge of its responsibilities.

**excess air**

A quantity of air in excess of the theoretical amount required to completely combust a material, such as a fuel, waste, etc. Also referred to as excess combustion air and is expressed as a percentage (e.g., 20% excess air).

**excess baggage revenue**

Revenues from the transportation by air of passenger baggage in excess of the free allowance.

**excess liability damages**

A cause of action in tort by an insured against his/her liability carrier for the negligent handling of settlement negotiations which result in a judgment against the insured in excess of his/her policy limits.

**excess work allowance**

A special time allowance given a worker for additional work required beyond that specified in his normal task or job or due to some alteration from usual working conditions. Also referred to as *additional work allowance*.

**excessive damages**

Those damages awarded by a jury which are grossly in excess of the amount warranted by law on the facts and circumstances of the case; unreasonable or outrageous damages.

**exchange rate**

A tradeoff for an increased sound pressure level above recommended limits for a proportionately reduced period of time.

**excitation**

The addition of energy to a system, thereby transferring it from its ground state to an excited state.

**excitation purity (p<sub>e</sub>)**

The distance between a color sample and neutral white in the 1931 CIE chromaticity diagram relative to the distance between neutral white and the spectrum locus or the purple boundary in the same direction.

**excited state**

An atom with an electron at a higher energy level than it normally occupies. This principal is employed in the use of thermoluminescent dosimeters (TLDs) for determining exposure to ionizing radiation with this type device.

**exclusion zone**

An area surrounding a Liquefied Natural Gas (LNG) facility in which an operator or government agency legally controls all activities in accordance with 49 CFR 193.2057 and 49 CFR 193.2059 for as long as the facility is in operation.

**exclusionary**

Any form of zoning ordinance that tends to exclude specific classes of persons or businesses from a particular district or area.

**exclusive event**

As pertains to fault tree analysis (FTA) and/or the Management Oversight and Risk Tree (MORT), a conditional event which places specific restrictions upon the occurrence of other events. Represented graphically as an oval. See also *conditional event*.

**exclusive right-of-way**

A highway or other facility that can only be used by buses or other transit vehicles. See also *controlled access rights-of-way*.

**exclusive rights-of-way**

Roadways or other right-of-way reserved at all times for transit use and/or other high occupancy vehicles. The restriction must be sufficiently enforced so that 95 percent of vehicles using the right-of-way are authorized to use it.

**Excobedo Rule**

Under this rule, when police investigation begins to focus on a particular suspect, the suspect is in custody, the suspect requests and is denied counsel, and the police have not warned him/her of his/her right to remain silent, the accused will be considered to have been denied assistance of counsel and no statement elicited during such interrogation may be used in a criminal trial.

**excretion**

The removal of a substance or its metabolites from the body in urine, feces, or expired air.

**excursion**

A movement or deviation from the norm. In industrial hygiene, it is the deviation above the norm that is of concern.

**excursion limit**

The amount by which an exposure limit can be exceeded, and the number of times in an exposure period it can be exceeded without causing an adverse health effect, narcosis, discomfort, impairment of self rescue, or reducing work efficiency.

**Executive Order**

A document promulgated by the President of the United States or the Governor of a state binding federal or state agencies, usually instructing them how to carry out or coordinate policies or programs. There are federal Executive Orders on flood plains and wetlands, for example.

**executive transportation**

Any use of an aircraft by a corporation, company, or other organization for the purposes of transporting its employees and/or property not for compensation or hire, and employing professional pilots for the operation of the aircraft.

**exempt carrier**

A for-hire interstate operator which transports commodities or provides types of services that

are exempt from federal regulation, could also operate within exempt commercial zones.

**exempt intracity zone**

The geographic area of a municipality or the commercial zone of that municipality described by the Interstate Commerce Commission (ICC) in 49 CFR 1048, revised as of October 1, 1975. The descriptions are printed in Appendix F to Subchapter B of 49 CFR, Chapter III. The term "exempt intracity zone" does not include any municipality or commercial zone in the State of Hawaii. For the purposes of 49 CFR 390.3(g), a driver may be considered to operate a vehicle wholly within an exempt intracity zone notwithstanding any common control, management, or arrangement for a continuous carriage or shipment to or from a point without such zone.

**exempt motor carrier**

A person engaged in transportation exempt from economic regulation by the Interstate Commerce Commission (ICC) under 49 U.S.C. 10526. Exempt motor carriers are subject to the safety regulations set forth in 49 CFR, Chapter III, Subchapter B.

**exempt solvent**

Specific organic compounds that are not subject to requirements of regulation because they have been deemed by the EPA to be of negligible photochemical reactivity.

**exempted aquifer**

Underground bodies of water defined in the Underground Injection Control program as aquifers that are sources of drinking water (although they are not being used as such) and that are exempted from regulations barring underground injection activities.

**exemption**

A temporary or permanent grant, license, or form of legal permission given by an agency to deviate from a regulation or provision of law administered by that agency. Issued in response to a petition for relief submitted by an individual or company.

**executive branch of government**

That branch of government consisting of the chief executive (i.e., the President), and those offices and positions held under its control.

**executive privilege**

This privilege, based on constitutional doctrine of separation of powers, exempts the executive from disclosure requirements applicable to the ordinary citizen or organization where such exemption is necessary to the discharge of highly important executive responsibilities involved in maintaining governmental operations, and extends not only to military and diplomatic secrets but also to documents integral to an appropriate exercise of the executive's domestic decision and policy making functions, that is, those documents reflecting the frank expression necessary in intragovernmental advisory and deliberative communications.

**exemplary damages**

Damages on an increased scale, awarded to the plaintiff over and above what will barely compensate for his/her property loss, where the wrong done to him/her was aggravated by circumstances of violence, oppression, malice, fraud, or wanton and wicked conduct on the part of the defendant, and are intended to solace the plaintiff for mental anguish, laceration of his/her feelings, shame, degradation, or other aggravations of the original wrong, or else to punish the defendant for his/her evil behavior or to make an example of him/her, for which reason they are also called *punitive* or *punitory damages* or *vindictive damages*. Unlike compensatory or actual damages, exemplary or punitive damages are based upon an entirely different public policy consideration: that of punishing the defendant or of setting an example for similar wrongdoers. In cases in which it is proved that a defendant has acted willfully, maliciously, or fraudulently, a plaintiff may be awarded exemplary damages in addition to compensatory or actual damages.

**exemption**

Freedom from a general duty or service; immunity from a general burden, tax, or charge.

**exercise**

The use of muscular exertion to maintain conditioning, train for an athletic event, or in an attempt to maintain health.

**exercise physiology**

The study of the metabolic activities and changes ongoing during exercise, including the aerobic and anaerobic mechanisms, and

respiratory, neuromuscular, and cardiovascular mechanisms.

**exfiltration**

The flow of air from inside a building to the outside due to the existence of negative pressure outside the building surface.

**exfoliation**

The peeling or flaking off of the skin.

**exhalation**

(1) The expulsion of air or other vapor from the lungs. (2) Escape in the form of vapor. (3) Vapor escaping from a body or substance.

**exhaust air**

That air rejected to the outside from a ventilation system.

**exhaust grill**

Fixture in the wall, floor, or ceiling through which air is exhausted from a space.

**exhaust hood**

A structure to enclose or partially enclose a contaminant-producing operation or process, or to guide air flow in an advantageous manner to capture a contaminant and is connected to a duct/pipe or channel for removing the contaminant from the hood.

**exhaust rate**

The volumetric flow rate at which air is removed by a ventilation system.

**exhaust system**

(1) The combination of components which provides for the enclosed flow of exhaust gas from the engine exhaust port to the atmosphere. (2) Any constituent components of the combination that conducts exhaust gases and which are sold as separate products. (3) A system for removing contaminated air from a space, comprising one or more of the elements including an exhaust hood, duct work, air-cleaning equipment, exhauster, and stack.

**exhaust ventilation**

Mechanical removal of air from a portion of a building (e.g., piece of equipment, room or general area).

**exhausting work**

That level of work activity which has a gross metabolic cost of over 380 calories per square meter of skin surface per hour in young men.

**exhaustion of administrative remedies**

A legal doctrine stipulating the need for a party to pursue all available, possibly fruitful



appeals within an agency before challenging that agency in court.

**existing source**

Under the Clean Air Act, any stationary source other than a new source.

**exit**

That portion of a means of egress which is separated from all other spaces of the building or structure by construction or equipment to provide a protected way of travel to the exit discharge. *See also means of egress and exit discharge.*

**exit access**

That portion of a means of egress which leads to an entrance to an exit. *See also means of egress.*

**exit discharge**

That portion of a means of egress between the termination of an exit and a public way. *See also means of egress.*

**exogenous**

Derived or developed from external causes.

**exophoria**

A condition in which the eyes tend to turn outward, preventing binocular vision.

**exoskeleton**

An external hard framework that supports and protects the soft tissues of lower animals, derived from the ectoderm. In vertebrates, the term is sometimes applied to structures produced by the epidermis, as hair, nails, hoofs, teeth, etc.

**exosphere**

The outermost portion of the atmosphere.

**exothermic**

When applied to reactions, describes those that produce substances that have less energy than the reaction materials resulting in a release of energy as heat.

**exotoxin**

A microbial toxin (i.e., a toxin excreted by a microorganism into a surrounding medium).

**expandable**

Flatbed trailer which can be expanded beyond its regular length to carry larger shipments.

**expect altitude at time or fix**

Air traffic control terminology. Used under certain conditions to provide a pilot with an

altitude to be used in the event of two-way communications failure. It also provides altitude information to assist the pilot in planning.

**expect further clearance**

Air traffic control terminology. Used to inform a pilot of the routing he can expect if any part of the route beyond a short range clearance limit differs from that filed.

**expectancy damages**

As awarded in actions for nonperformance of contract, such damages are calculable by subtracting the injured party's actual dollar position as a result of the breach from that party's projected dollar position had performance occurred. The goal is to ascertain the dollar amount necessary to ensure that the aggrieved party's position after the award will be the same (to the extent money can achieve this identity as if the other party had performed as expected).

**expectation**

A mental set in which an individual anticipates a certain outcome in a given situation.

**expected attainment**

*See fair day's work.*

**expected departure clearance time (EDCT)**

Air traffic control terminology. The runway release time assigned to an aircraft in a controlled departure time program and shown on the flight progress strip as an EDCT.

**expected work pace**

The rate of work output required to achieve a certain level of earnings or production standards.

**expectorate**

To cough up and eject from the mouth by spitting.

**expedite**

Used by Air Traffic Control (ATC) when prompt compliance is required to avoid the development of an imminent situation.

**expenditure**

All amounts of money paid out by a government, net of recoveries and other correcting transactions, other than retirement of debt, investment in securities, extension of credit, or agency transactions. Federal expenditures are also referred to as outlays.

**expenditures**

Funds spent for energy purchased and paid for or delivered to a manufacturer during a calendar year. The expenditure dollar includes state and local taxes and delivery charges.

**experience**

The verifiable, objective history of one's work performance.

**experience curve**

A graphical plot of a worker's performance over time, especially in the learning phase of a job.

**experience rating**

A method for adjusting workers' compensation rates using a three-year history of the employer's claim experience. *See also merit rating (2).*

**experimental aircraft**

An aircraft which does not have a type design or does not meet other certification standards. The "experimental" designation is one of several "Special Airworthiness Certificates" which allows the aircraft to operate in U.S. airspace. None may be used for commercial purposes. Experimental aircraft are divided into three groups: a) Amateur Built: an aircraft, built by one or more persons who undertake the effort for the purpose of recreation and education; d) Exhibition: a unique (one-of-a-kind) aircraft, a replica, a foreign or U.S. military surplus aircraft which may be used for exhibition purposes, movie and television productions, or sanctioned, organized events where the unique or unusual characteristics of the aircraft can be displayed; c) Other: includes experimental aircraft that are not amateur or exhibition. This includes aircraft involved in research and development, crew training, market surveys, air racing, those used to show compliance with regulations, and the like.

**experimental variable**

*See independent variable and dependent variable.*

**experimenter**

One who designs, supervises, and/or conducts research.

**experimenter error**

Any error resulting from an experimenter's inappropriate action or inaction, regardless of its nature.

**expert**

An individual who (a) possesses certain knowledge, wisdom, and/or skills in a particular subject not likely to be possessed by ordinary persons, (b) acquired such knowledge, wisdom, and/or skills by study, investigation, and/or experience, (c) is capable of reasoning, inference, and drawing conclusions based on hypothetical facts relating to that subject, and (d) can offer reasonable opinions regarding one or more situations dealing with that particular subject.

**expert evidence**

Any testimony given by an expert witness based on objective data or information, or information derived directly from such objective data or information. *See also expert testimony.*

**expert opinion**

A statement of belief by an expert witness, based on a given situation.

**expert system**

A decision-making job aid, generally developed in consultation with experts in a given field and which typically contains a computer-based model and database generated from that human expertise.

**expert testimony**

The opinion of a person skilled in a particular art, science, or profession, having demonstrated special knowledge through experience and education, beyond that which is normally considered common for that art, science, or profession. *See also expert, expert evidence, and expert witness.*

**expert witness**

(1) *General.* A witness qualified as a subject expert based upon their knowledge, skill, experience, training, or education. Unlike other witnesses, an expert's testimony may be in the form of an opinion. *See also expert testimony.* (2) *Law.* One who by reason of education or specialized experience possesses superior knowledge with respect to a subject about which persons having no particular training are incapable of forming an accurate opinion or deducing correct conclusions.

**expiration**

(1) Exhaling of the lungs caused by the relaxation of the diaphragm and rib muscles which causes decreased chest cavity space,

thus forcing air out through the trachea. (2) Cessation; termination from mere lapse of time, as the expiration date of a lease, insurance policy, statute, and the like. Coming to a close; termination or end.

**expiratory flow rate**

The maximum rate at which air can be expelled from the lungs.

**expiratory reserve volume (ERV)**

The maximum amount of air that can be forcibly expired after a normal expiration.

**exploration**

Under the Federal Antarctic Protection Act of 1990: Any activity, including logistic support, the purpose of which is the identification or evaluation of specific mineral resource deposits. The term includes exploratory drilling, dredging, and other surface or sub-surface excavations required to determine the nature and size of mineral resource deposits and the feasibility of their development.

**explosimeter**

A device for detecting the presence of, and measuring the concentration of, gases or vapors that can reach explosive concentrations.

**explosion**

A rapid build-up and release of pressure caused by chemical reaction or by an over-pressurization within a confined space leading to a massive rupture of the pressurized container.

**explosion/detonation**

*Railroad Operations.* An accident/incident caused by the detonation of material carried by or transported by rail. A detonation occurs when a shock wave exceeds the speed of sound. Explosions/detonations resulting from mishaps during loading or unloading operations, and those caused by fire aboard on-track equipment are included in this definition.

**explosion-proof**

The design of a device or equipment to eliminate the possibility of its igniting volatile materials. A type of construction that is designed to contain an explosion and prevent its propagation to the atmosphere outside the device/equipment.

**explosion-proof apparatus**

An apparatus enclosed in a case that is capable of withstanding an explosion of a specified gas or vapor which may occur within it and of preventing the ignition of a specified gas or vapor surrounding the enclosure by sparks, flashes, or explosion of the gas or vapor within, and which operates at such external temperature that it will not ignite a surrounding flammable atmosphere.

**explosive**

Any chemical compound, mixture, or device, the primary or common purpose of which is to function by explosion (i.e., with substantially instantaneous release of gas and heat), unless such compound, mixture, or device is otherwise specifically classified by a governing authority, such as the U.S. Department of Transportation (DOT). The term "explosive" shall include all material which is classified as Class A, Class B, and Class C by the DOT and includes, but is not limited to, dynamite, black powder, pellet powders, initiating explosives, blasting caps, electric blasting caps, safety fuse, fuse lighters, fuse ignitors, squibs, cordeau detonate fuse, instantaneous fuse, ignitor cord, ignitors, small arms ammunition, small arms ammunition primers, smokeless propellant, cartridges for propellant-actuated power devices, and cartridges for industrial guns. Commercial explosives are those explosives which are intended to be used in commercial industrial operations.

**explosive-actuated power devices**

Any tool or special mechanized but not including propellant-actuated power devices. Examples of explosive-actuated power devices are jet tappers and jet perforators.

**explosive atmosphere**

An atmosphere containing a mixture of vapors or gases which is within the explosive or flammable range. Also referred to as an *explosive mixture*.

**explosive decompression**

A rapid and significant decrease in barometric pressure.

**explosive limit**

*See lower flammable limit and upper flammable limit.* Also referred to as *explosive limit*.

**explosive mixture**

See *explosive atmosphere*.

**explosive quantity distance site plan**

A formal plan for explosives facilities and areas detailing the quantity of explosives, operating and storage limits and restrictions, and resultant distance clearance requirements.

**explosive range**

See *flammability range*.

**explosive strength**

That force expended in a very short burst of intense muscular activity.

**explosive train**

See *explosive transfer assembly*.

**explosive transfer assembly (ETA)**

An arrangement of explosive or combustible elements used to perform or transfer energy to an end function. Also referred to as *explosive train*.

**exponent**

A number conventionally placed to the right and above a base number, representing the power to which the base number is raised for evaluation.

**exponential decay**

As pertains to ionizing radiation, a mathematical expression describing the rate at which radioactive materials decay.

**exponential distribution**

A distribution having the probability distribution function of

$$f(x) = ae^{-ax}$$

where:

$$a = 1/\text{mean}, \text{ and } a > 0 \text{ for } x > 0$$

$$f(x) = 0 \text{ for } x \leq 0$$

**export license**

A government document permitting designated goods to be shipped out of the country as specified.

**exports**

(1) Outbound international freight, including re-export of foreign merchandise. (2) Shipments of goods from the 50 States and the District of Columbia to foreign countries and to Puerto Rico, the Virgin Islands, and other U.S. possessions and territories.

**exposed**

(1) *General*. Having come into close contact with something that may cause adverse physical or mental effects. (2) *Wiring Methods*. Where the circuit is in such a position that in case of failure of supports or insulation, contact with another circuit may result. Also, wires installed on or attached to the surface or behind panels designed to allow access.

**exposed pipeline**

A pipeline where the top of the pipe is protruding above the seabed in water less than 15 feet deep, as measured from the mean low water.

**exposure**

(1) *General*. a) A measure representing some combination of the amount of time an individual or object has been located in some environment and the severity of that environment. b) The amount of radiation or pollutant present in an environment which represents a potential health threat to the living organisms in that environment; the amount of biological, physical, or chemical agent that reaches a target population. c) The proximity to a condition that may produce injury or damage. (2) *Physiology*. Contact of an organism with a chemical, biological, or physical agent. Exposure is quantified as the amount of the agent available at the exchange boundaries of the organism (skin, lungs, etc.) and available for absorption; also, the route by which an organism comes in contact with a toxicant (inhalation, ingestion, dermal absorption, injection).

**exposure assessment**

(1) The defining of exposure pathways and the calculation of the potential magnitude of exposure. (2) The determination or estimation (qualitative or quantitative) of the magnitude, frequency, duration, and route of exposure. (3) Estimation of the amount of chemicals that may be ingested, inhaled, or absorbed through the skin by people living, working, or recreating in areas where air, water, soil, etc. may be contaminated.

**exposure dose**

A measure of the x-radiation or gamma radiation at a certain place, based upon the ability of the radiation to produce ionization. The unit of measure is the roentgen (R).

**exposure dose rate**

The radiation exposure dose per unit time expressed as R/unit time.

**exposure event**

An incident of contact with a chemical or physical agent. An exposure event can be defined by time (e.g., day, hour) or by the incident (e.g., eating a single meal of contaminated fish).

**exposure hours**

See *employee hours*.

**exposure limit**

A somewhat outdated term for the maximum vibration acceleration as a function of frequency and duration.

**exposure pathway**

The course a chemical or physical agent takes from the source to the exposed organism. An exposure pathway describes a unique mechanism by which an individual or population is exposed to chemicals or physical agents at or originating from the site. Each exposure pathway includes a source or release from a source, an exposure point, and an exposure route. If the exposure point differs from the source, a transport/exposure medium (e.g., air) or media (in cases of intermedia transfer) also is included.

**exposure point**

A point of potential contact between an organism and a chemical or physical agent.

**exposure point concentration**

The concentration of a chemical at the exposure point.

**exposure route**

The way a chemical or physical agent comes in contact with an organism (i.e., by ingestion, inhalation, injection, or dermal contact).

**express body**

Open box truck body.

**express bus**

A bus that operates a portion of the route without stops or with a limited number of stops.

**expressway**

A divided highway for through traffic with full or partial access control and including grade separations at all or most major intersections.

**extend**

Move adjacent body segments connected by a common joint such that the angle between the segments increases in the direction opposite to that of maximum flexion.

**extended duty hours**

See *extended work hours*.

**extended functional reach**

See *thumb-tip reach, extended*.

**extended hours**

See *extended work hours*.

**extended over-water operations**

(1) With respect to aircraft other than helicopters, an operation over water at a horizontal distance of more than 50 nautical miles from the nearest shoreline. (2) With respect to helicopters, an operation over water at a horizontal distance of more than 50 nautical miles from the nearest shoreline and more than 50 nautical miles from an off-shore heliport structure.

**extended source**

Any energy source whose dimensions are significant relative to the distance between the source and the point of observation. (Note: "significant" usually refers to greater than about 10' of arc for visual work).

**extended work hours**

That working time beyond the normal work-day hours. Also referred to as *extended duty hours* or *extended hours*.

**extension ladder**

A non-self-supporting portable ladder adjustable in length. It consists of two or more sections traveling in guides or brackets so arranged as to permit length adjustment. Its size is designated by the sum of the lengths of the section measured along the side rails.

**extension trestle ladder**

A self-supporting portable ladder, adjustable in length, consisting of a trestle ladder base and a vertically adjustable single ladder, with suitable means for locking the ladders together. The size is designated by the length of the trestle ladder base.

**extensor**

Any muscle whose contraction normally causes joint extension.

**extensor retinaculum**

A membranous band of fibers in the posterior hand/wrist which forms the carpal tunnel through which the finger extensor tendons pass. Also referred to as *transverse dorsal ligament*.

**extent flexibility**

The ability to twist, stretch, bend, or reach out with one or more parts of the body on a one-time basis.

**external**

Beyond the outer or surface portion of the body or a body segment.

**external auditory canal**

The tubular structure leading from the external environment to the tympanic membrane. Also referred to as the *external auditory meatus*.

**external auditory meatus**

See *external auditory canal*.

**external canthus**

See *ectocanthus*.

**external combustion engine**

An engine in which fuel combustion takes place outside the cylinder, turbine, or the like and in which energy is turned into mechanical force; for example, a steam engine.

**external ear**

The visible, most lateral aspects of the ear, including the auricle, external auditory canal, and the tympanic membrane. Sometimes referred to as the *outer ear*.

**external element**

Any work element in a process or operation which is performed by the operator outside the machine- or process-controlled time. See also *external work*.

**external load**

*Aviation*. A load that is carried, or extends, outside of the aircraft fuselage.

**external load attaching**

The structural components used to attach an external load to an aircraft, including externally loaded containers, the backup structure at the attachment points, and any quick-release device used to jettison the external load.

**external mechanical environment**

The manmade physical environment, consisting of tools, equipment, etc.

**external naris**

The entrance from the exterior to the air passageway of the nose. Also referred to more commonly as *nostril*.

**external occipital protuberance**

See *inion*.

**external pacing**

Pertaining to externally paced work.

**external radiation**

Ionizing radiation in which the source is located outside the body and the radiation penetrates into deeper tissues.

**external time**

That amount of time required to perform manual work elements when a machine is not in operation.

**external viewing**

Having the capability for seeing outside a vehicle, either to view the vehicle itself or the surrounding environment.

**external work**

Any work element or combination of work elements in a process or operation which is performed by the operator outside the machine- or process-controlled time. Also referred to as *outside work*. See also *external element*.

**externally operable**

Capable of being operated without exposing the operator to contact with live parts.

**externally paced element**

A work element whose completion is beyond a worker's control. Also referred to as *restricted element*.

**externally paced work**

Any manual or human/machine work in which the work pace and/or output is at least in part beyond a worker's control. Also called *restricted work*.

**exteroceptor**

Any sensory receptor at the body surface which receives information about the external environment.



**extinguisher classification**

The letter classification given an extinguisher to designate the class or classes of fire on which an extinguisher will be effective.

**extinguisher rating**

The numerical rating given to an extinguisher which indicates the extinguishing potential of the unit based on standardized tests developed by Underwriters' Laboratories, Inc.

**extinguishing agent**

Any substance capable of performing a fire extinguishing function.

**extorsion**

A rotation of one or both eyes about their vertical axes away from the midline (opposite of *intorsion*).

**extortion**

The obtaining of property from another induced by wrongful use of actual or threatened forces, violence, or fear, or under control of an official right. A person is guilty of theft by extortion if he/she purposely obtains property of another by threatening to: a) inflict bodily injury on anyone or commit any other criminal offense; or, b) accuse anyone of a criminal offense; or c) expose any secret tending to subject any person to hatred, contempt, ridicule, or to impair his/her credit or business repute; or d) take or withhold action as an official, or cause an official to take or withhold action; or e) bring about or continue to strike, boycott, or other collective unofficial action, if the property is not demanded or received for the benefit of the group in whose interest the actor purports to act; or f) testify or provide information or withhold testimony or information with respect to another person's legal claim or defense; or g) inflict any other harm which would not benefit the actor. *See also blackmail.*

**extra allowance**

That additional time allowed for the completion of work which is not specified in the standard allowance.

**extracanthic diameter**

The horizontal linear distance between endocanthus and ectocanthus of one eye.

**extracellular water (ECW)**

That bodily water external to the cells. *See also total body water.*

**extrafusal fiber**

The contractile fiber of muscle tissue which is capable of generating motion or tension. *See also intrafusal fiber.*

**extraocular muscle**

Any of the six voluntary muscles which are capable of positioning the eyeball within the orbit.

**extraordinary flood**

A flood whose unexplained occurrence is not foreshadowed by the usual course of nature, and whose magnitude and destructiveness could not have been anticipated or provided against by the exercise of ordinary foresight. One such unusual occurrence is that it could not have been foreseen by men of ordinary experience and prudence.

**extraordinary grand jury**

Such a jury is limited in the scope of its investigation and may not go beyond terms of executive proclamation, and examination of witness must be confined within those terms, and must not be used as a means of disclosing or intermeddling with extraneous matters.

**extraordinary hazards**

One not commonly associated with a job or undertaking. If hazards are increased by what other employees do, and an injured employee has no part in increasing them, they are considered to be "extraordinary."

**extraordinary items income (loss)**

Income or loss which can be characterized as material, unusual, and of infrequent occurrence.

**extraordinary nuclear occurrence**

Under the Federal Atomic Energy Act of 1954: Any event causing a discharge or dispersal of source, special nuclear, or byproduct material from its intended place of confinement in amounts off site, or causing radiation levels off site, which the Nuclear Regulatory Commission or the Secretary of Energy, as appropriate, determines to be substantial, and which the Nuclear Regulatory Commission or the Secretary of Energy, as appropriate, determines has resulted or will probably result in substantial damages to persons off site or property off site. Any determination by the Nuclear Regulatory Commission or the Secretary of Energy, as appropriate, that such an event has, or has not, occurred shall be final

and conclusive, and no other official or any court shall have power or jurisdiction to review any such determination. The Nuclear Regulatory Commission or the Secretary of Energy, as appropriate, shall establish criteria in writing setting forth the basis upon which such determination shall be made.

**extraordinary risk**

A risk lying outside of the sphere of the normal, arising out of conditions not usual in the business. It is one which is not normally and necessarily incident to the employment, and is one which may be obviated by the exercise of reasonable care by the employer.

**extrapolate**

To estimate a value beyond current knowledge by using known current values and a predictor.

**extrapolation**

Using known data to predict or estimate unknown outcomes. A calculation, based on limited data from natural or experimental observation of humans or other organisms exposed to a substance, that aims to estimate the dose-effect relationship outside the range of the available data.

**extrapyramidal system**

A collection of subcortical neural structures involved in skeletal muscle activities which generally have more central integration, are slower than and supportive of pyramidal system motor function, and have involvement with postural motions.

**extrasystole**

A premature heartbeat.

**extratropical cyclone**

A cyclonic storm that most often forms along a front in middle and high latitudes. It is not a tropical storm or hurricane.

**extravehicular activity (EVA)**

That activity outside a support or transport vehicle, especially referring to space flight which requires a space suit.

**extravehicular mobility unit (EMU)**

An enclosed and self-contained clothing set for protecting the occupant outside a protective vehicle in a hazardous environment.



*Astronaut performing an EVA wearing an EMU*

**extreme value projection**

In system safety, a risk projection technique used to provide information about potential losses (i.e., in the future) that are more severe than those occurring in the past.

**extremely hazardous substances**

Any of 406 chemicals identified by the EPA on the basis of toxicity, and listed under SARA Title III. The list is subject to revision.

**extremely high frequency (EHF)**

That portion of the electromagnetic spectrum consisting of radiation frequencies between 30 GHz and 300 GHz.

**extremely low frequency (ELF)**

That portion of the electromagnetic spectrum consisting of radiation frequencies below 300 Hz.

**extremely low frequency magnetic field**

A magnetic field with a frequency in the range of 0 to 3000 hertz that results from current flowing in electrical conductors.

**extremity**

Term referring to either an upper limb (arms) or a lower limb (legs).

**extrinsic**

Pertaining to a structure or mechanism which originates outside the structure on which it acts.

**eye**

(1) *Anatomy*. The organ of vision. The total of all structures and tissues enclosing and enclosed within the eyeball. (2) *Meteorology*. A region in the center of a hurricane (tropical storm) where the winds are light and skies are clear to partly cloudy.

**eye blink**

A brief closure and re-opening of both eyelids. Also referred to simply as *blink*.

**eye blink rate**

The number of occasions within a specified temporal interval that an individual executes an eye blink.

**eye dominance**

See *ocular dominance*.

**eye height, sitting**

The vertical distance from the upper seat surface to endocanthus. Measured with the individual seated erect and looking straight ahead.

**eye height, standing**

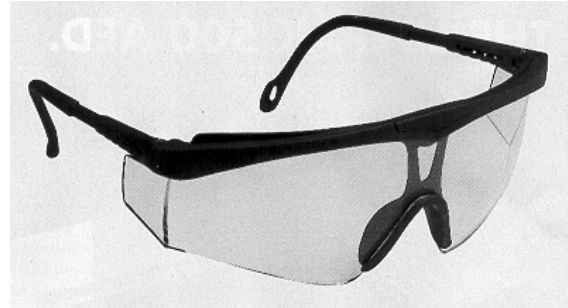
The vertical distance from the floor or other reference surface to endocanthus. Measured with the individual standing erect, looking straight ahead, and his/her weight balanced evenly on both feet.

**eye movement**

Any active or passive, conscious or unconscious movement of the eyeball relative to the orbit.

**eye protector**

A device worn by a person or affixed to equipment to deter harmful substances from contact with the human eye. The use of safety glasses, splash goggles, or other protective eye wear that will reduce the potential for eye contact with a hazardous material being used, handled, or processed is required under OSHA 29 CFR 1910.132. Such eyewear must meet or exceed the specification of the American National Standards Institute (ANSI Z-87). Normally, eye protection is provided at no cost to the worker when it is determined that such protection is required in a particular work environment.



*Typical eye protector meeting ANSI Z-87 specifications*

**eye scan**

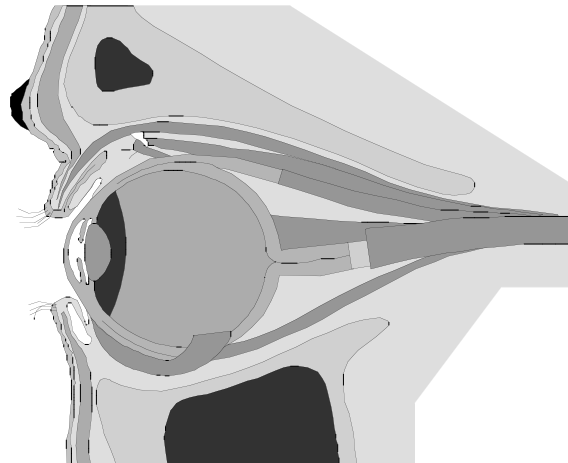
To scan the visual field by eye movement alone, not allowing or using any head movements.

**eye sensitivity curve**

See *spectral luminous efficiency function*.

**eye wall**

A wall of dense thunderstorms that surrounds the eye of a hurricane.



*The human eyeball and surrounding components*

**eyeball**

The approximately spherical portion of the eye, including the sclera, cornea, pupil/iris, retina, intraocular fluids, lens, and blood vessels. The *cornea* is the clear transparent layer on the front of the eyeball. It is a continuation of the sclera (the white of the eye), the tough outer coat that helps protect the delicate mechanism of the eye. The *choroid* is the middle layer and contains blood vessels. The third layer, the *retina*, contains rods and cones, which are specialized cells that are sensitive to light. Behind the cornea and in front of the lens is the iris, the circular pigmented band around the pupil. The iris works

much like the diaphragm in a camera, widening or narrowing the pupil to adjust to different light conditions.

**eyebrow**

The supraorbital ridge with its associated overlying tissues and hairs.

**eyecup**

A small vessel for the application of cleansing or medical solution to the exposed area of the eyeball.

**eyeflush**

The process of rinsing fluid over the conjunctiva and anterior eyeball with water or eye-wash.

**eyeground**

The fundus of the eye.

**eyelash**

A short, curved hair embedded in the free edges of the eyelids, usually in two or three separate rows.

**eyelid**

A thin, soft, movable structure which overlies the anterior portion of the eyeball, is capable of closure to protect the eyeball from certain stimuli, is lined on its posterior surface by the conjunctiva, and contains various glands, a muscle, and the eyelashes.

**eyepiece**

The lens or system of lenses of a microscope nearest the eye of the observer when the instrument is in use.

**eyestrain**

A visuo-motor fatigue resulting from a prolonged period of muscle tension to focus to overcome glare or any other vision-interfering conditions. Also referred to as *visual strain*.

**eyewash**

A solution for flushing the eyes.

**eyewash fountain**

A device used to irrigate and flush the eyes in the event of eye contact with a hazardous substance. Generally speaking, water deluge from the fountain must be capable of providing a continuous flow for a period of not less than 15 minutes.

**eyewear**

Any type of eye covering, whether for eye protection or for improving vision. *See also* [\*eye protector\*](#).

**eyewitness**

A person who can testify as to what he/she has seen from personal observation. One who saw the act, fact, or transaction to which he/she testifies. Distinguished from *ear-witness*.

# F

## *F*

A variable obtained from computing the *F* ratio and used in tests of statistical significance.

## °F

Degrees Fahrenheit. See *Fahrenheit temperature scale*.

## *F* distribution

That frequency distribution obtained by taking repeated random pairs of independent samples and calculating the *F* ratio.

## *F* ratio

The ratio of two chi squares divided by their respective degrees of freedom.

## *F* test

The use of an obtained *F* value with the degrees of freedom for each of the mean squares in an *F* distribution to indicate the probability that the samples are from the same population. Also referred to as *variance ratio test*.

## FAA

See *Federal Aviation Administration*. Also, in maritime insurance means "Free of all average," denoting that the insurance is against total loss only.

## fabric filter

A cloth device that catches dust particles from industrial emissions.

## fabric softener

Any of a class of cationic amine compounds of substituted fatty acids which act to reduce wrinkling and increase fluffiness while retaining moisture to reduce static electricity/cling. Also called *textile softener*.

## fabricated evidence

(1) Evidence manufactured or arranged after the fact, and either wholly false or else warped and discolored by artifice and contrivance with a deceitful intent. To fabricate evidence is to arrange or manufacture circumstances or *indicia* (after the fact committed) with the purpose of using them as evidence, and of deceitfully making them appear as if accidental or undesigned. (2) To devise falsely or contrive by artifice with the intention to deceive. Such evidence may be wholly forged

and artificial, or it may consist of so warping and distorting real facts as to create an erroneous impression in the minds of those who observe them and then presenting such impression as true and genuine.

## fabricated fact

In the law of evidence, a fact existing only in statement, without any foundation in truth. An actual or genuine fact to which a false appearance has been given by design; a physical object placed in a false connection with another, or with a person on whom it is designed to cast suspicion.

## Fabry's syndrome

A genetically transmitted disorder characterized by remittent attacks of fever, lightning pains and burning dysesthesia of the extremities, proteinuria and hematuria, and cutaneous lesions.

## face

(1) The anterior portion of the head, from crinion to menton, and from right otobasion to left otobasion. (2) The surface of anything, especially the front, upper, or outer part or surface. That which particularly offers itself to the view of a spectator. The words of a written paper in their apparent or obvious meaning, as, the face of a note, bill, bond, check, draft, judgment record, or contract. The face of a judgment for which it was rendered exclusive of interest.

## face amount

The amount of an instrument is that shown by the mere language employed, and excludes any accrued interest.

## face breadth

See *bizygomatic breadth*.

## face line

A line used from head of boat to the tow.

## face shield

A protective device designed to prevent hazardous materials, dusts, sharp objects, and other materials from contacting the face. A device worn in front of the eyes and a portion of, or all of, the face. It supplements the eye protection afforded by a primary protective device, such as safety glasses.

## face up

To make-up the towboat to the tow (i.e., maneuver barges into position and secure for towing).

**face validity**

Having apparently relevant or appropriate measure, statement, or data.

**face velocity**

The average air velocity in the plane of an opening into an enclosure, such as a hood, through which air moves, usually expressed in feet per minute or meters per second.

**face wires**

Heavy cables securing boat to tow (i.e., pusher to barge).

**facepiece**

That part of a respirator which covers the wearer's nose, mouth, and in a full facepiece, the eyes.

**facet**

A smooth, generally flat surface on a bone.

**facial angle**

That angle formed by the intersection of a line connecting nasion and gnathion with the Frankfort plane of the head.

**facial breadth**

See *bizygomatic breadth*.

**facial disfigurement**

That which impairs or injures the beauty, symmetry, or appearance of a person. That which renders unsightly, misshapen, or imperfect, or deforms in some manner.

**facial hair policy**

Respirators are not to be worn when conditions prevent a good facial seal. Such conditions may include the presence of a beard, long sideburns, mustache, or other facial hair growth. A facial hair policy is one which does not permit the presence of facial hair that could prevent a good respirator-to-face seal on personnel who may be required to wear such devices. Some facilities do not permit such facial hair on anyone who comes on the site.

**facial height**

The vertical linear distance between crinion and menton in the midsagittal plane. Also referred to as *facial length*. See also *facial height, total*.

**facial height, total**

The sellion-menton length. See also *facial height*.

**facial index**

The ratio of the facial length to the face breadth.

**facial length**

See *facial height* and *facial height, total*.

**facial nerve**

A cranial nerve having both motor and sensory aspects, and which is involved in facial expressions, cutaneous sensations, and taste.

**facies**

The front aspect of the head.

**facility**

(1) *General*. Any building, plant, factory, office complex, or other structure where work or other designated activity or activities occur on a regularly scheduled or unscheduled basis. Also, all or any portion of buildings, structures, sites, complexes, equipment, roads, walks, passageways, parking lots, or other real or personal property, including the site where the building, property, structure, or equipment is located. (2) *CERCLA*. Broadly defined under Superfund to include any structure, installation, equipment, landfill impoundment, storage vessel, vehicle, or any site or area where hazardous substances have been deposited or otherwise have come to be located. (3) *OSHA*. The buildings, containers, or equipment which contain a process.

**Facility Index System (FINDS)**

An informational database that provides the EPA with an inventory of almost 500,000 facilities. FINDS contains both facility information and pointers to other sources of information that contain more detailed information about the facility.

**facing movement**

*Rail*. The movement of a train over the points of a switch which face in a direction opposite to that in which the train is moving.

**facing point lock plunger**

*Rail*. That part of a facing point lock which secures the lock rod to the plunger stand when the switch is locked.

**facing point switch**

*Rail*. A switch, the points of which face traffic approaching in the direction for which the track is signaled.



**fact**

A thing done; an action performed or an incident transpiring; an event or circumstance; an actual occurrence; an actual happening in time or space or an event mental or physical; that which has taken place.

**fact question**

Those issues in a trial or hearing which concern facts or events and whether such occurred and how they occurred as contrasted with issues and questions of law. Fact questions are for the jury, unless the issues are presented at a bench trial, while law questions are decided by the judge. Fact questions and their findings are generally not appealable though rulings of law are subject to appeal.

**factor**

(1) A set of related variables as determined by factor analysis. (2) An agent or element that contributes to the production of a result. (3) See *variable*.

**factor analysis**

A statistical data treatment in which variable scores are analyzed and rotated to obtain orthogonality and achieve a summary in terms of a minimum number of factors.

**factor loading**

A calculated measure of the degree of generalization between variables and factors in a factor analysis.

**factor of safety**

(1) *Ultimate*. The ratio of the ultimate stress to the maximum calculated stress based on limit loads, as follows:

$$\text{Ultimate Factor of Safety} = \frac{\text{Ultimate Strength}}{\text{Limit Load Stress}}$$

(2) *Yield*. The ratio of the yield stress to the maximum calculated stress based on limit loads, as follows:

$$\text{Yield Factor of Safety} = \frac{\text{Yield Strength}}{\text{Limit Load Stress}}$$

**factorial design**

A type of experimental design in which two or more independent variables are examined as part of the same process to permit the study of both their independent and interaction effects on a dependent variable.

**factory acts**

Laws enacted for the purpose of regulating the hours of work, and the health and safety conditions.

**factory investigative audit**

*Maritime*. The presence of the Officer in Charge of Marine Inspection (OCMI) and other Coast Guard personnel at a manufacturing facility to gather information and evidence to prove or disprove violations of the statutes, or to investigate potential defects which may present substantial risks of personal injury.

**Factory Mutual Association**

An industrial fire protection, engineering, and inspection bureau established and maintained by mutual insurance companies. The Factory Mutual laboratories test and list fire protection equipment for approval, assist in the development of standards, and conduct research in fire protection. Approvals by the Factory Mutual Association carry the designation FM.

**facts in issue**

Those matters of fact on which the plaintiff proceeds by his/her action, and which the defendant controverts in his/her defense. Under civil rule practice in the federal courts, and in most state courts, the facts alleged in the initial complaint are usually quite brief, with the development of additional facts being left to discovery and pretrial conference.

**factum probandum**

(*Latin*) In the law of evidence, the fact to be proved; a fact which is at issue, and to which evidence is to be directed.

**facultative**

Capable of adaptation to different conditions.

**facultative anaerobe**

Microorganisms that can multiply either in the presence or in the absence of oxygen. They can obtain energy either by respiration or by fermentation and do not require oxygen for biosynthesis.

**facultative saprophytes**

Organisms which can only survive on dead organic matter.

**faculty**

(1) A normal power or function, especially of the mind. (2) The teaching staff of an educational institution or organization.

**FAF**

See *final approach fix*.

**Fahrenheit temperature scale**

The scale of temperature in which 212 degrees is the boiling point of water at 760 mm mercury pressure and 32 degrees is the freezing point. Abbreviated °F.

**fail**

Fault, negligence, or refusal. To fall short; be unsuccessful or deficient. Also, fading health.

**fail operational**

A design characteristic which allows continued operation of a system or subsystem despite a discrete failure.

**fail operational, fail safe**

A fail operational design which also remains acceptably safe. See also *fail operational and fail safe*.

**fail passive**

A system or component design feature that, under failure conditions, will have no effect on the operation of the overall system.

**fail safe**

A system or component design feature that, under failure conditions, will permit the failed component or system to revert to a safe mode and not present an unacceptable hazard risk or flow of energy due to the failure condition.

**failure**

The inability of a component or system to perform its designed function within specified limits.

**failure analysis**

See *failure mode and effect analysis*.

**failure assessment**

The process in which the cause, effect, responsibility, and cost of a failure are determined and reported.

**failure condition**

As pertains to fault tree analysis (FTA) and/or the Management Oversight and Risk Tree (MORT), the top event, or that primary event subject to a failure analysis through an event tree.

**failure management**

The planning, decision-making, and policy implementation which attempt to identify and eliminate potential failures or apply corrective policies/procedures after a failure occurrence.

**failure mechanism**

See *fault*.

**failure mode**

The status in which or process during which a piece of equipment failed.

**failure mode and effect analysis (FMEA)**

An in-depth analysis of possible failures and their resulting effects related to system function and performance (*functional FMEA*) or system hardware and components (*hardware FMEA*).

**failure of consideration**

As applied to notes, contracts, conveyances, etc., this term does not necessarily mean a want of consideration, but implies that a consideration, originally existing and good, has since become worthless or has ceased to exist or been extinguished, partially or entirely.

**failure of proof**

Inability or failure to prove the cause of action or defense in its entire scope and meaning.

**failure to state cause of action**

Failure of the plaintiff to allege sufficient facts in the complaint to maintain action. In other words, even if the plaintiff proved all the facts alleged in the complaint, the facts would not establish a cause of action entitling the plaintiff to recover against the defendant. The motion to dismiss for failure to state a cause of action is sometimes referred to as a) a demurrer or b) a failure to state a claim upon which relief can be granted.

**failure to testify**

In a criminal trial, defendant is not required to testify and such failure may not be commented on by judge or prosecution because of protection under the Fifth Amendment of the U.S. Constitution.

**failure tolerance**

The ability of a system to experience one or more failures and still maintain some functional capability.

**faint**

The temporary loss of consciousness as a result of a reduced supply of blood to the brain. Also referred to as *syncope*. See also *unconsciousness*.

**fair**

(1) Having the qualities of impartiality and honesty; free from prejudice, favoritism, and

self-interest. (2) A gathering of buyers and sellers for the purpose of exhibiting and sale of goods; usually accompanied by amusements, contests, entertainment, and the like.

**fair and impartial jury**

Jury chosen to hear evidence and render verdict without any prior fixed opinion concerning the guilt, innocence, or liability of defendant. Means that every member of the jury must be a fair and impartial juror.

**fair and impartial trial**

A hearing by an impartial and disinterested tribunal; a proceeding which hears before it condemns, which proceeds upon inquiry, and renders judgment only after consideration of evidence and facts as a whole. A basic constitutional guarantee contained implicitly in the Due Process Clause of the Fourteenth Amendment of the U.S. Constitution.

**fair comment**

A form of qualified privilege applied to news media publications relating to discussion of matters which are of legitimate concern to the community as a whole, because they materially affect the interests of all the community.

**fair day's work**

A concept of the amount of daily work output expected by management from qualified employee(s), assuming no processing limitations. Also referred to as *expected attainment*.

**Fair Labor Standards Act (FLSA)**

A comprehensive federal employment regulation providing employer requirements such as equal pay, overtime, minimum wage, employment of minors, and recordkeeping. Sometimes referred to as *Wage and Hour Law*.

**fair market value**

*Automotive Industry.* The value of a vehicle as stated by the National Automotive Dealers Association (NADA) or other sale publication. For vehicles under the 3-year replacement cycle, fair market value is the average loan indicated in the appropriate NADA publication.

**fair preponderance of evidence**

Evidence sufficient to create in the minds of the triers of fact the conviction that the party upon whom is the burden of proof has established its case. The greater and weightier the evidence, the more convincing the evidence.

This term is not a technical term, but simply means that the evidence outweighs that which is offered to oppose it, and does not necessarily mean the greater number of witnesses.

**fair representation**

Refers to the duty of a union to represent fairly all its members, both in the conduct of collective bargaining and in the enforcement of the resulting agreement, and to serve the interests of all members without hostility or discrimination toward any and to exercise its discretion with complete good faith and honesty and to avoid arbitrary conduct.

**fairly close**

*Maritime.* As close to the shore, dike, or light as practicable (approximately 150 feet off).

**FAK**

See *freight all kinds*.

**fall streaks**

Falling ice crystals that evaporate before reaching the ground. They appear as streaks of grayish blue in the sky. See also *virga*.

**fall time**

The time interval between an initial response in an instrument and a specified percent decrease (e.g., 90%) after a decrease in the inlet concentration.

**fall wind**

A strong, cold wind that blows downslope off snow-covered plateaus.

**fallen skier**

*Coast Guard.* A person who has fallen off their water skies.

**falling river**

The river condition when gauge readings are decreasing day by day.

**Fallot's tetralogy**

A combination of congenital cardiac defects, namely, pulmonary stenosis, ventricular septal defects, dextroposition of the aorta, so that such combination overrides the interventricular septum and receives venous as well as arterial blood, and right ventricular hypertrophy.

**fallout**

Radioactive debris from a nuclear detonation which becomes airborne, or has deposited on the earth. It is the dust and other particulate material which contain radioactive fission products from a nuclear explosion.

**false alarm**

An indication of a problem when no operational problem exists other than in the sensing mechanism. *See also type I error.*

**false chokes**

A choking sensation or cough due to breathing 100% oxygen for an extended period of time, which results in dry lung tissues.

**false statement**

Statement knowingly false, or made recklessly without honest belief in its truth, and with purpose to mislead or deceive. The federal criminal statute governing false statements applies to three distinct offenses: falsifying, concealing, or covering up a material fact by any trick, scheme, or device; making false, fictitious, or fraudulent false documents or writing.

**falsifying a record**

It is a crime, under state and federal statutes, for a person, knowing that he/she has no privilege to do so, to falsify or otherwise tamper with public records with the purpose of deceiving or injuring anyone or concealing any wrongdoing.

**falx**

A sickle-shaped structure.

**fan**

A mechanical device which physically moves air and creates static pressure.

**fan, airfoil**

A type of backward inclined blade fan with blades that have an airfoil cross-section.

**fan, axial**

A fan in which airflow is parallel to the fan shaft and air movement is induced by a screw-like action of the fan blade.

**fan, backward inclined blade**

A centrifugal fan with blades inclined opposite to fan rotation.

**fan, centrifugal**

A fan in which the air leaves the fan in a direction perpendicular to the direction of entry.

**fan curve**

A curve relating the pressure versus volume flow rate of a given fan at a fixed fan speed (rpm).

**fan, forward curved blade**

A centrifugal fan with blades inclined in the direction of fan rotation.

**fan laws**

Statements and equations that describe the relationship between fan volume, pressure, brake horsepower, size, and any other changes made in fan operation. For example, volume varies directly as fan speed and horsepower varies as the cube of the fan speed.

**fan, paddle wheel**

A centrifugal fan with radial blades.

**fan, propeller**

An axial fan employing a propeller to move air.

**fan, radial blade**

A centrifugal fan with radial blades extending out radially from the fan wheel shaft.

**fan rating table**

Tables published by fan manufacturers presenting the range of capacities of a particular fan model along with the static pressure developed and the fan speed within the limits of the fan's construction.

**fan, squirrel cage**

A centrifugal blower with forward curved blades.

**fan static pressure**

The static pressure added to that of the ventilation system due to the presence of the fan. It equals the sum of pressure losses in the system minus the velocity pressure in the air at the fan inlet.

**fan, tube axial**

An axial fan mounted in a duct section.

**fan, vane axial**

An axial flow fan mounted in a duct section with vanes to straighten the airflow and increase static pressure.

**FAP**

*See final approach point.*

**FAR**

*See Federal Aviation Regulation.*

**far field**

In acoustics, the uniform sound field which is free and undisturbed by bounding surfaces and other sources of sound and in which the sound pressure level obeys the inverse-square

law relationship and decreases 6 dB for each doubling of distance from the source. Also referred to as a *free sound field*.

**far infrared**

That portion of the infrared radiation spectrum with wavelengths ranging from about 5000 nm to 1 mm. Also referred to as *long wavelength infrared*.

**far ultraviolet**

That portion of the ultraviolet radiation spectrum consisting of wavelengths from about 100 to 200 nm.

**far vision**

The ability to see the distant physical environment.

**farad (F)**

A unit of capacitance; that amount of capacitance between two conductors separated by a dielectric with a potential difference of one volt and charged by one coulomb.

**fare**

The required payment for a ride on a public transportation vehicle. It may be paid by any acceptable means, for example, cash, token, ticket, transfer, fare card, voucher, or pass or user fee.

**fare evasion**

The unlawful use of transit facilities by riding without paying the applicable fare.

**fare recovery ratio**

The ratio of fare revenue to operating expenses.

**farm-to-market agricultural transportation**

The operation of a motor vehicle controlled and operated by a farmer who: a) is a private motor carrier of property; b) is using the vehicle to transport agricultural products from a farm owned by the farmer, or to transport farm machinery or farm supplies to or from a farm owned by the farmer; and c) is not using the vehicle to transport hazardous materials of a type or quantity that requires the vehicle to be placarded in accordance with 49 CFR 177.823.

**farm vehicle driver**

A person who drives only a motor vehicle that is a) controlled and operated by a farmer as a private motor carrier of property; b) being used to transport either agricultural products,

or farm machinery, farm supplies, or both, to or from a farm; c) not being used in the operation of a for-hire motor carrier; c) not carrying hazardous materials of a type or quantity that requires the vehicle to be placarded in accordance with 49 CFR 177.823, and d) being used within 150 air-miles of the farmer's farm.

**farmer's lung disease**

A syndrome that consists initially of chills and fever, followed by impairment of lung function. It is normally caused by chronic exposure to moldy hay or other moldy organic material. It is also known as *thresher's lung*.

**farmer's skin**

See *sailor's skin*.

**farsightedness**

See *hyperopia*.

**FAS**

See *free alongside ship*.

**fast file**

*Aviation*. A system whereby a pilot files a flight plan via telephone that is tape recorded and then transcribed for transmission to the appropriate air traffic facility. Locations having a fast file capability are contained in the Airport/Facility Directory.

**fast meter response**

The "fast" response of the sound level meter shall be used. The fast dynamic response shall comply with the meter dynamic characteristics in the American National Standard Institute (ANSI) specification for Sound Level Meters.

**fast twitch muscle**

See *white muscle*.

**fastenings**

With regard to ladders, a device to attach a ladder to a structure, building, or equipment.

**fat**

(1) The adipose or fatty tissue of the body.  
(2) An oily substance consisting of glycerin (a form of alcohol called glycerol) and a group of fatty acids, chiefly palmitic, stearic and oleic acids, combined as glycerin esters. Fats consist of carbon, hydrogen, and oxygen in most foods, especially in meats and dairy products. Fats may be solid, such as butter, or liquid such as olive oil.

**fat body mass**

That portion of the body mass which is due to fat.

**fat-free body**

A physical/metabolic state in which an individual has only the minimal amount of fat stored in his/her body.

**fat-free mass**

See *lean body mass*.

**fat-free weight**

See *lean body weight*.

**fat patterning**

The distribution of subcutaneous fat throughout the body.

**fatal accident**

(1) *General*. An accident causing the death of one or more persons in or as a direct result of that accident. (2) *National Safety Council*. An accident that results in one or more deaths within one year. (3) *Transportation*. a) A motor vehicle traffic accident resulting in one or more fatal injuries. b) An accident for which at least one fatality was reported. c) Statistics reported to the Federal Highway Administration (FHWA) shall conform to the 30-day rule, i.e., a fatality resulting from a highway vehicular accident is to be counted only if death occurs within 30 days of the accident.

**fatal accident rate**

*Transportation*. The fatal accident rate is the number of fatal accidents per 100 million vehicle miles of travel.

**fatal alcohol involvement crash**

A fatal crash is alcohol related or alcohol involved if either a driver or a non-motorist (usually a pedestrian) had a measurable or estimated blood alcohol concentration (BAC) of 0.01 grams per deciliter (g/dl) or above.

**fatal crash**

*Transit*. A police-reported crash involving a motor vehicle in transport on a traffic-way in which at least one person dies within 30 days of the crash.

**fatal injury**

(1) *Law-Insurance*. A term embracing injuries resulting in death, which, as used in accident and disability insurance policies is distinguished from "disability," which embraces

injuries preventing the insured from performing the work in which he/she is usually employed, but not resulting in death. (2) Any injury which results in death within 7 days of the accident. (3) *National Transportation Safety Board*. Any injury which results in death within 30 days of the accident.

**fatal plus nonfatal injury accidents**

The sum of all fatal accidents and nonfatal-injury accidents.

**fatality**

(1) *General*. A death due to any cause. (2) *American Gas Association*. Death resulting from the failure or escape of gas. (3) *Highway Transit*. Those deaths a) which result from motor vehicle accidents that occurred during the relevant calendar year, and b) those in which the injured person(s) died within 30 days of the accident. Also, a transit-caused death confirmed within 30 days of a transit incident. Also, a death as the result of a crash that involves a motor vehicle in transport on a traffic-way and in which at least one person dies within 30 days of the crash. For purposes of statistical reporting on transportation safety, fatality shall be considered a death due to injuries in a transportation accident or incident that occurs within 30 days of that accident or incident. (4) *Rail Operations*. The death of a person resulting from an injury incurred during railroad operations or resulting from an occupational illness, if death occurs within 365 days of initial diagnosis. Also, a death confirmed within 30 days after an incident which occurs under the collision, derailment, personal casualty, or fire categories.

**fatality/injury**

Refers to the average number of fatalities and injuries which occurred per one hundred accidents. Frequently used as an index of accident severity.

**fatality rate**

*Transit*. (1) The average number of fatalities which occurred per accident or per one hundred accidents. (2) The fatality rate is the number of fatalities per 100 million vehicle miles of travel.

**fatfold**

See *skinfold*.



**fatigue**

(1) *Physiological*. The condition of being extremely tired as a result of some physical and/or mental exertion. A state characterized by lack of motivation, interest, and/or an inability to maintain normal, consistent productivity and quality due to recent physical or mental exertion. (2) *Structural*. The progressive localized permanent structural change that occurs in a material subjected to constant or variable amplitude loads at stresses having a maximum value less than the ultimate strength of the material.

**fatigue allowance**

That additional time which is added to the normal time to permit a worker to rest.

**fatigue-decreased proficiency**

A decrease in performance due to prolonged whole-body vibration exposure (an older term).

**fatigue-decreased proficiency boundary**

Those limits of human whole-body vibration exposure for certain time durations at specified frequencies which are intended to maintain a basic performance level (an older term).

**fatigue life**

The number of cycles of stress or strain of a specified character that a given material sustains before failure of a specified nature occurs. Also referred to as *cycle life*.

**fauces**

The opening between the posterior mouth and the oropharynx.

**fault**

(1) *General*. A manifestation of an error. Any condition which may or will cause a system to fail. (2) *Seismology*. A fracture or zone of fractures along which there has been displacement of the sides relative to one another, parallel to the fracture. (3) *Law*. Negligence; an error or defect of judgement or of conduct; any deviation from prudence, duty, or rectitude; any shortcoming, or neglect of care or performance resulting from inattention, incapacity, or perversity; a wrong tendency, course, or act; bad faith or mismanagement; neglect of duty.

**fault hazard analysis (FHA)**

A system safety analysis method, usually an extension of the failure mode and effect

analysis, that evaluates the overall effect of functional failures on other subsystems or the overall system itself. Synonymous with *functional hazard analysis*.

**fault of operator**

*Coast Guard*. Speeding; overloading; improper loading, not properly seating occupants of a boat; no longer lookout; carelessness; failure to heed weather warnings; operating in a congested area; not observing the Rules of the Road; unsafe fueling practices; lack of experience; ignorance of aids to navigation; lack of caution in an unfamiliar area of operation; improper installation or maintenance of hull, machinery, or equipment; poor judgment; recklessness; overpowering the boat; panic; proceeding in an unseaworthy craft; operating a motorboat near persons in the water; starting engine with clutch engaged or throttle advanced; irresponsible boat handling such as quick, sharp turns.

**fault stand**

In seismology, an individual fault of a set of closely spaced parallel or sub-parallel faults of a fault system.

**fault tolerance**

The built-in ability of a system to provide continued correct operation in the presence of a specified number of faults or failures.

**fault tree analysis (FTA)**

A system safety analysis technique used as an inductive method (top down, from the known to the unknown) to evaluate fault or failure events in a system or process.

**FBI**

See [Federal Bureau of Investigation](#).

**FBSA**

See [Federal Boating Safety Act](#).

**FBT**

See [full berth terms](#).

**fc**

See [foot-candle](#).

**FCC**

See [Federal Communications Commission](#).

**FCDC**

Flexible, confined detonating cord.

**FCLT**

See [freeze calculated landing time](#).

**FDA**

See *Food and Drug Administration*.

**FDAAL**

See *Food and Drug Administration Action Level*.

**feasibility study**

(1) *OSHA*. A study performed by OSHA to determine if a proposed standard is practical for the exposure under consideration as well as from an implementation perspective. (2) *EPA*. An analysis of the practicability of a proposal; e.g., a description and analysis of the potential cleanup alternatives for a site or alternatives for a site on the National Priorities List. The feasibility study usually recommends selection of a cost-effective alternative. It usually starts in tandem with the Remedial Investigation (RI). Performed together, the process is commonly referred to as the RI/FS. The term can apply to a variety of proposed corrective or regulatory actions.

**feasible**

A measure that is practical and capable of being accomplished or brought about.

**feasor**

The doer or maker. Also used in the compound term "tort-feasor," meaning one who commits or is guilty of a tort.

**featherbedding**

The name given to employee practices which create or spread employment by unnecessarily maintaining or increasing the number of employees used, or the amount of time consumed, to work on a particular job. Most of these practices stem from a desire on the part of employees for job security in the face of technological improvements.

**feathered propeller**

*Aviation*. A propeller whose blades have been rotated so that the leading and trailing edges are nearly parallel with the aircraft flight path to stop or minimize drag and engine rotation. Normally used to indicate shutdown of a reciprocating or turboprop engine due to malfunction.

**febella**

A sesamoid fibrocartilage in the gastrocnemius muscle.

**fecal coliform bacteria**

Bacteria found in the intestinal tracts of mammals. Their presence in water or sludge is an indicator of pollution and possible contamination by pathogens.

**feces**

The collective excretions normally passing through the anus, including undigested and unabsorbed food and intestinal secretions.

**Fechner's Law**

A proposed logarithmic relationship between stimulus intensity and sensory strength, having the form

$$S = k \log I_s$$

where:

$S$  = sensory strength

$k$  = constant depending on the units of measurement and modality

$I_s$  = stimulus intensity

**fecundity**

The physiological ability to reproduce.

**federal**

Belonging to the general government or union of the states. Founded on or organized under the Constitution of the United States. Of or constituting a government in which power is distributed between a central authority (i.e., federal government) and a number of constituent territorial units (i.e., states).

**federal agency**

Any executive department, military department, government corporation, government-controlled corporation or other establishment in the executive branch of government including the Executive Office of the President or any independent regulatory agency.

**federal-aid highways**

Those highways eligible for assistance under Title 23 U.S.C. except those functionally classified as local or rural minor collectors.

**Federal-Aid Primary Highway System**

The Federal-Aid Highway System of rural arterials and their extensions into or through urban areas in existence on June 1, 1991, as described in 23 U.S.C. 103(b) in effect at that time.

**Federal Aid Secondary Highway System**

This existed prior to the ISTEA [Intermodal Surface Transportation Efficiency Act] of 1991 and included rural collector routes.

### **Federal Aid Urban Highway System**

This existed prior to the ISTEA [Intermodal Surface Transportation Efficiency Act] of 1991 and included urban arterial and collector routes, exclusive of urban extensions of the Federal-Aid Primary system.

### **Federal Aviation Administration (FAA)**

Formerly the Federal Aviation Agency, the Federal Aviation Administration was established by the Federal Aviation Act of 1958 (49 U.S.C. 106) and became a component of the Department of Transportation in 1967 pursuant to the Department of Transportation Act (49 U.S.C. app. 1651 note). The Administration is charged with a) regulating air commerce in ways that best promote its development and safety and fulfill the requirements of national defense; b) controlling the use of navigable airspace of the United States and regulating both civil and military operations in such airspace in the interest of safety and efficiency; c) promoting, encouraging, and developing civil aeronautics; d) consolidating research and development with respect to air navigation facilities; e) installing and operating air navigation facilities; f) developing and operating a common system of air traffic control and navigation for both civil and military aircraft; and g) developing and implementing programs and regulations to control aircraft noise, sonic boom, and other environmental effects of civil aviation.

### **Federal Aviation Regulations (FAR)**

The set of regulatory obligations contained in Title 14 of the Code of Federal Regulations which FAA is charged to enforce in order to promote the safety of civil aviation both domestically and internationally.

### **Federal Boating Safety Act (FBSA)**

Enacted by Congress on 10 August 1971, it gave the Coast Guard the authority to establish comprehensive boating safety programs, authorized the establishment of national construction and performance standards for boats and associated equipment and created a more flexible regulatory authority concerning the use of boats and associated equipment. Amended by the Recreational Boating Safety and Facilities Improvement Act of 1980, also known as The Recreational Boating Fund Act of 1980 (The Biaggi Act) which provided financial assistance, in part through motorboat

fuel taxes, for state recreational boating safety programs. Now re-codified as Chapter 43 of Title 46, United States Code.

### **Federal Bureau of Investigation (FBI)**

The FBI (established in 1908) is charged with investigating all violations of federal laws with the exception of those which have been assigned by legislative enactment or otherwise to some other federal agency. The FBI's jurisdiction includes a wide range of responsibilities in the criminal, civil, and security fields. Among these are espionage, sabotage, and other subversive activities; kidnapping; extortion; bank robbery; interstate transportation of stolen property; civil rights matters; interstate gambling violations; fraud against the Government; and assault or killing the President or a Federal officer. Cooperative services of the FBI for other duly authorized law enforcement agencies include fingerprint identification, laboratory services, police training, and the National Crime Information Center.

### **Federal Communications Commission (FCC)**

The FCC was created by the Communications Act of 1934 to regulate interstate and foreign communications by wire and radio in the public interest. It was assigned additional regulatory jurisdiction under the provisions of the Communications Satellite Act of 1962. The scope of its regulatory powers includes radio and television broadcasting, telephone, telegraph, and cable television operation; two-way radio and radio operators; and satellite communication.

### **federal crimes**

Those acts which have been made criminal by federal law. There are no federal common-law crimes though many federal statutes have incorporated the elements of common-law crimes. Most federal crimes are codified in Title 18 of the United States Code; though other Code Titles also include specific crimes.

### **Federal Emergency Management Agency (FEMA)**

An independent agency that advises the President on meeting civil emergencies and provides assistance to individuals and public entities that suffered property damage in emergencies and disasters when recommended by the President.

**Federal Employees' Compensation Act**

Type of workers' compensation plan for federal employees by which payments are made for death or disability sustained in performance of duties of employment.

**Federal Employer's Liability Act**

Federal workers' compensation law which protects employees of railroads engaged in interstate and foreign commerce. Payments are made for death or disability sustained in performance of duties of employment.

**Federal Energy Regulatory Commission (FERC)**

The federal agency with jurisdiction over interstate electricity sales, wholesale electric rates, hydroelectric licensing, natural gas pricing, oil pipeline rates, and gas pipeline certification. Federal Energy Regulatory Commission (FERC) is an independent regulatory agency within the Department of Energy and is the successor to the Federal Power Commission.

**Federal Facility Compliance Act (FFCA) of 1992**

Amendment to the Resource Conservation and Recovery Act (RCRA). Ensures that there is a complete and unambiguous waiver of sovereign immunity with regard to fines and penalties against Federal Facilities. Act allows State environmental agencies and the EPA to impose civil penalties and administrative fines on Federal Facilities under RCRA for violations of federal, state, and local solid and hazardous waste laws.

**Federal Highway Administration (FHWA)**

Became a component of the Department of Transportation in 1967 pursuant to the Department of Transportation Act (49 U.S.C. app. 1651 note). It administers the highway transportation programs of the Department of Transportation under pertinent legislation and the provisions of law cited in section 6a) of the act (49 U.S.C. 104). The Administration encompasses highway transportation in its broadest scope seeking to coordinate highways with other modes of transportation to achieve the most effective balance of transportation systems and facilities under cohesive federal transportation policies pursuant to the act. The Administration administers the Federal-Aid Highway Program; is responsible for several highway-related safety programs;

is authorized to establish and maintain a national network for trucks; administers a coordinated federal lands program; coordinates varied research, development and technology transfer activities; supports and participates in efforts to fund research and technology abroad; plus a few additional programs.

**Federal Implementation Plan (FIP)**

Implemented by the EPA when a state fails to implement their own plan for the establishment, regulation, and enforcement of air pollution standards.

**Federal Maritime Commission**

Regulates the waterborne foreign and domestic offshore commerce of the United States, assures that United States international trade is open to all nations on fair and equitable terms, and guards against unauthorized monopoly in the waterborne commerce of the United States. This is accomplished through maintaining surveillance over steamship conferences and common carriers by water; assuring that only the rates on file with the Commission are charged; approving agreements between persons subject to the Shipping Act; guaranteeing equal treatment to shippers and carriers by terminal operators, freight forwarders, and other persons subject to the shipping statutes; and ensuring that adequate levels of financial responsibility are maintained for indemnification of passengers or oil spill cleanup.

**Federal Mediation and Conciliation Service**

The Federal Mediation and Conciliation Service helps prevent disruptions in the flow of interstate commerce caused by disputes between labor and management by providing mediators to assist disputing parties in the resolution of their differences. The Service can intervene on its own motion or by invitation of either side in a dispute. Mediators have no law enforcement authority and rely wholly on persuasive techniques. The Service also helps provide qualified third-party neutrals as fact finders or arbitrators.

**Federal Motor Carrier Safety Regulations (FMCSR)**

The regulations are contained in the Code of Federal Regulations, Title 49, Chapter III, Subchapter B.

### **Federal Power Act**

Enacted in 1920, amended in 1935, the Act consists of three parts. The first part incorporated the Federal Water Power Act administered by the former Federal Power Commission, whose activities were confined almost entirely to licensing non-Federal hydroelectric projects. Parts II and III were added with the passage of the Public Utility Act. These parts extended the Act's jurisdiction to include regulating the interstate transmission of electrical energy and rates for its sale, at wholesale rates, in interstate commerce. The Federal Energy Regulatory Commission is now charged with the administration of this law.

### **federal preemption**

The U.S. Constitution and acts of Congress have given to the federal government exclusive power over certain matters such as interstate commerce. Sedition, to the exclusion of state jurisdiction, is also given to federal courts. When such preemptions are invoked, they are commonly described as involving a "federal question."

### **Federal Railroad Administration (FRA)**

The FRA was created pursuant to section 3(e)(1) of the Department of Transportation Act of 1966 (49 U.S.C. app. 1652). The purpose of the Federal Railroad Administration is to promulgate and enforce rail safety regulations, administer railroad financial assistance programs, conduct research and development in support of improved railroad safety and national rail transportation policy, provide for the rehabilitation of Northeast Corridor (NEC) rail passenger service, and consolidate government support of rail transportation activities.

### **Federal Register (FR)**

The official daily publication of the United States government that provides a uniform system for publishing Presidential and federal agency documents.

### **Federal Rules of Civil Procedure**

Body of procedural rules which governs all civil actions in the U.S. District Courts and after which most states have modeled their own rules of civil procedure. These rules were promulgated by the U.S. Supreme Court in 1938 under power granted by Congress, and have since been frequently amended. Such rules also govern adversary proceedings

in the bankruptcy courts; and Supplemental Rules, in addition to main body of rules, govern admiralty and maritime actions.

### **Federal Rules of Evidence**

Rules which govern the admissibility of evidence at trials in the Federal District Courts and before U.S. Magistrates. Many states have adopted Evidence Rules patterned on these federal rules.

### **Federal Sentencing Guidelines for Organizations (Section 8)**

Guidelines that went into effect on November 1, 1991 designed to promote uniformity of sentencing for corporations convicted in federal cases, such as violations of securities or antitrust laws, kickbacks, or bribery. Mitigating factors lessen penalties if an organization has an Effective Compliance Program. Guidelines do not apply to environmental offenses. *See also [effective compliance program](#) and [Environmental Guidelines for Sentencing Organizations](#).*

### **Federal Standard 595a**

A color ordering system developed by the U.S. Government for standardizing colors used by federal agencies according to a 5-digit code and a gloss/luster criterion. *See also [color ordering system](#).*

### **Federal Tort Claims Act**

The government of the United States may not be sued in tort without its consent. That consent was given in the Federal Tort Claims Act (1946), which largely abrogated the federal government's immunity from tort liability and established the conditions for suits and claims against the federal government. The Act (28 U.S.C.A §§ 1346(b), 2674) preserves governmental immunity with respect to the traditional categories of intentional torts, and with respect to acts or omissions which fall within the "discretionary function or duty" of any federal agency or employee.

### **Federal Trade Commission**

Agency of the federal government created in 1914. The Commission's principal functions are to promote free and fair competition in interstate commerce through the prevention of general trade restraints such as price-fixing agreements, false advertising, boycotts, illegal combinations of competitors and other unfair methods of competition.

**Federal Transit Administration (FTA)**

Formerly the Urban Mass Transportation Administration, it operates under the authority of the Federal Transit Act, as amended (49 U.S.C. app. 1601 et seq.). The Federal Transit Act was repealed on July 5, 1994, and the Federal transit laws were codified and re-enacted as Chapter 53 of Title 49, United States Code. The Federal Transit Administration was established as a component of the Department of Transportation by section 3 of Reorganization Plan No. 2 of 1968 (5 U.S.C. app.), effective July 1, 1968. The missions of the Administration are a) to assist in the development of improved mass transportation facilities, equipment, techniques, and methods, with the cooperation of mass transportation companies both public and private; b) to encourage the planning and establishment of area-wide urban mass transportation systems needed for economical and desirable urban development, with the cooperation of mass transportation companies both public and private; c) to provide assistance to state and local governments and their instrumentalities in financing such systems, to be operated by public or private mass transportation companies as determined by local needs; and d) to provide financial assistance to state and local governments to help implement national goals relating to mobility for elderly persons, persons with disabilities, and economically disadvantaged persons.

**Federal Water Pollution Control Act (FWPCA)**

Law passed in 1970 and amended in 1972 giving the Coast Guard a mandate to develop, among other things, marine sanitation device regulations.

**fee damages**

Damages sustained by and awarded to an abutting owner of real property occasioned by the construction and operation of an elevated railroad in a city street, are so called because compensation is made to the owner for the injury to, or deprivation of, his/her easements of light, air, and access, and these are parts of the fee.

**feed**

A mechanism which introduces material to a machine for processing.

**feedback**

The return of meaningful information within a closed-loop system so that system performance can be appropriately modified. Also referred to as *knowledge of results*.

**feedback control system**

See *closed-loop system*.

**feedback mechanism**

A process whereby an initial change in an atmospheric process will tend to either reinforce the process (*positive feedback*) or weaken the process (*negative feedback*).

**feeder**

All circuit conductors between the service equipment, or the generator switchboard of an isolated plant, and the final mechanical rather than electrical function.

**feeder bus**

A bus service that picks up and delivers passengers to a rail rapid transit station or express bus stop or terminal.

**feeder fix**

*Aviation*. The fix depicted on Instrument Approach Procedure Charts which establishes the starting point of the feeder route.

**feeder route**

*Aviation*. A route depicted on instrument approach procedure charts to designate routes for aircraft to proceed from the en route structure to the initial approach fix (IAF).

**feeder vessel**

A vessel which transfers containers to a "mother ship" for an ocean voyage.

**feedlot**

A relatively small, confined area for the controlled feeding of animals that tends to concentrate large amounts of animal wastes that cannot be absorbed by the soil and, hence, may be carried to nearby streams or lakes by rainfall runoff.

**feedstock energy**

Under ISO 14000, the gross combustion heat of raw material inputs, which are not used as energy sources, to a byproduct system.

**fellow servant**

One who works for and is controlled by the same employer; a co-worker. Employees who derive authority and compensation from the



same employer, and are engaged in the same general business.

**fellow servant rule**

A common-law doctrine, now generally abrogated by workers' compensation acts and Federal Employers' Liability Act, that in an action for damages brought against an employer by an injured employee the employer may allege that the negligence of another fellow employee was partly or wholly responsible for the accident resulting in the injury, and thus reducing or extinguishing his/her own liability.

**felon**

A person who commits or has committed a felony.

**felony**

A crime of a graver or more serious nature than those designated as misdemeanors. For example, an aggravated assault (a felony) is contrasted with simple assault (a misdemeanor). Under many state statutes, any offense punishable by death or imprisonment for a term exceeding one year. The federal and many state criminal codes define felony status crimes, and in turn also have various classes of felonies (e.g., Class A, B, C, etc.) or degrees (e.g., first, second, third) with varying sentences for each class.

**Fels index**

An estimate for the percentage of body fat and nutritional status of the body.

**FEMA**

See *Federal Emergency Management Association*.

**femoral breadth**

See *knee breadth*.

**femur**

The long bone in the thigh extending from the pelvis to the knee. It is the longest and straightest bone in the body. Its proximal end articulates with the acetabulum, a cup-like cavity in the pelvic girdle. The greater and lesser trochanters are the two processes (prominences) at the proximal end of the femur.

**fen**

A type of wetland that accumulates peat deposits. Fens are less acidic than bogs, deriving most of their water from groundwater rich

in calcium and magnesium. See also *wetlands*.

**FERC**

See *Federal Energy Regulatory Commission*.

**Feret's diameter**

The distance between the extreme boundaries of a particle.

**fermentation**

The breakdown of organic substance by microorganisms with a resulting release of energy.

**ferrel cell**

The name given to the middle latitude cell in the 3-cell model for general circulation.

**ferries**

Establishments primarily engaged in operating ferries for the transportation of passengers or vehicles.

**ferruginous bodies**

Bodies formed by fibers that have entered the lungs. These bodies can be formed by any kind of durable fiber including asbestos, fiberglass, and vegetable fibers of siliceous origin.

**ferry boat**

A boat providing fixed-route service across a body of water.

**ferry crossing**

Route used to transport traffic between two points separated by water.

**ferry flight**

*Aviation.* A flight for the purpose of a) returning an aircraft to base, b) delivering an aircraft from one location to another, or c) moving an aircraft to and from a maintenance base. Ferry flights, under certain conditions, may be conducted under terms of a special flight permit.

**ferry vessel**

A vessel which is limited in its use to the carriage of deck passengers or vehicles or both, operates on a short run on a frequent schedule between two points over the most direct water route, other than in ocean or coastwise service, and is offered as a public service of a type normally attributed to a bridge or tunnel.

**ferryboats**

Vessels for carrying passengers and/or vehicles over a body of water. The vessels are

generally steam- or diesel-powered conventional ferry vessels. They may also be hovercraft, hydrofoil and other high speed vessels.

**fertility toxin**

A substance which reduces male or female fertility.

**fertilizer**

Materials such as nitrogen and phosphorous that provide nutrients for plants. Commercially sold as fertilizers and may contain other chemicals or may be in the form of processed sewage sludge.

**fetotoxicity**

Harmful effects exhibited by a fetus, due to exposure to a toxic substance, that may result in death, reduced birth weight, or impairment of growth and physiological dysfunction.

**fetotoxin**

A substance which is toxic to the fetus.

**fetus**

Later stage of development in unborn organisms, following the embryonic stage.

**FEV**

Forced expiratory volume.

**FEV-1**

See *forced expiratory volume-one second*.

**fever**

A condition in which the body temperature is above normal.

**FFCA**

See *Federal Facility Compliance Act of 1992*.

**FFDCA**

Federal Food, Drug, and Cosmetic Act.

**FHA**

See *fault hazard analysis*.

**FHWA**

See *Federal Highway Administration*.

**fiber**

(1) *General*. A particle having a length to diameter/width ratio of greater than 3 to 1. (2) *PCM Method*. Particulate at least 5 micrometers in length with an aspect ratio (length to width ratio) of at least 3 to 1. A rod-like structure having a length at least three times its diameter. (3) *EPA-TEM Method*. Structure greater than or equal to 0.5 micrometers in length with an aspect ratio of

5 to 1, or greater, and having substantially parallel sides.

**fiber optics**

A system of flexible quartz or glass fibers with internal reflective surfaces that can transmit light.



*A fiber optic lead*

**fiberglass**

A commercial, nonflammable fiber that is made from spun glass primarily used for insulation. Fibers of this material can penetrate the skin causing dermatitis in some people and, when airborne, can affect the lungs of some people. Fiberglass is resistant to most chemicals and solvents.

**fiberglass (plastic) hull**

Hulls of fiber reinforced plastic. The laminate consists of two basic components, the reinforcing material (glass filaments) and the plastic or resin in which it is embedded.

**fiberscope**

A flexible instrument for direct visual examination of the interior of hollow organs or body cavities, constructed of fibers having special optical properties.

**fibrillation**

(1) A transitory muscular contraction resulting from spontaneous activation of single muscle cells or fibers. (2) Rapid and uncoordinated contractions of the heart. (3) The quality of being made up of fibers.

**fibrinogen**

A blood protein which precipitates out to form fibers during the clotting process.

**fibroblast**

Connective tissue cell.

**fibroma**

A tumor composed mainly of fibrous or fully developed connective tissue.

**fibrosis**

The formation and accumulation of fibrous tissue, especially in the lungs. Also the chronic collagenous degeneration of the pulmonary parenchyma.

**fibrosis producing dust**

A dust which, when inhaled, deposited, and retained in the lungs, can produce fibrotic growth that may result in pulmonary disease.

**fibrous**

A material which contains fibers.

**fibula**

The smaller, more lateral bone of the lower leg.

**fibular height**

The vertical distance from the floor or other reference surface to the superior tip of the fibula. Measured with the individual standing erect and the weight distributed evenly on both feet.

**FID**

See *flame ionization detector*.

**fidelity**

(1) The degree to which a system's input is reflected in its output. (2) The degree of realism in a simulation.

**field**

(1) That portion of the interlaced display which is represented by every other horizontal scan line. Two fields make a frame on an interlaced video display. (2) A limited area, such as the area of a slide visible through the lens system of a microscope.

**field and gathering pipelines**

A network of pipelines (mains) transporting natural gas from the individual wells to a compressor station, processing point, or main trunk pipeline.

**field area**

*Energy*. A geographic area encompassing two or more pools that have a common gathering and metering system, the reserves of which are reported as a single unit. This concept applies primarily to the Appalachian region. See also *pool*.

**field blank sample**

Sampling media, such as a charcoal tube, filter cassette, or other device, which is handled in the field in the same manner as are other sampling media of the same type but through which no air is sampled. These are used in sampling and analysis procedures to determine the contribution to the analytical result from the media plus any contamination which may have occurred during handling in the field, shipping, and storage before analysis. Often referred to as a *blank sample*.

**field-constructed tanks**

Vertical cylinders with a capacity of greater than 50,000 gallons.

**field duplicate**

A sample that is collected concurrently with another sample of the same type, and in the same location for the same duration. It is an extra field sample that helps to ensure quality control.

**field of view**

The solid angle within the visual field for which the eye or other optical sensor provides useful data.

**field sampling plan**

Provides guidance for all fieldwork by defining in detail the sampling and data-gathering methods to be used on a project.

**field separation facility**

A surface installation designed to recover lease condensate from a produced natural gas stream usually originating from more than one lease and managed by the operator of one or more of these leases.

**field study**

An investigation in which subjects are observed or measured in their natural environments.

**FIFRA**

Federal Insecticide, Fungicide, and Rodenticide Act.

**Fifteenth Amendment**

Amendment to the U.S. Constitution, ratified by the States in 1870, guaranteeing all citizens the right to vote regardless of race, color, or previous condition of servitude. Congress was given the power to enforce such rights by appropriate legislation.

**Fifth Amendment**

Amendment to the U.S. Constitution providing that no person shall be required to answer for a capital or otherwise infamous offense unless on indictment or presentment of a grand jury in military cases; that no person will suffer double jeopardy; that no person will be compelled to be a witness against himself/herself; that no person shall be deprived of life, liberty, or property without due process of law and that private property will not be taken for public use without just compensation.

**fifth wheel**

(1) A device mounted on a truck tractor or similar towing vehicle (e.g., converter dolly) which interfaces with and couples to the upper coupler assembly of a semitrailer. (2) Load-supporting plate mounted to frame of vehicle. Pivot mounted, it contains provisions for accepting and holding the kingpin of a semitrailer, providing a flexible connection between the tractor and the trailer.

**fighting words doctrine**

The First Amendment doctrine that holds that certain utterances are not constitutionally protected as "free speech" if they are inherently likely to provoke a violent response from the audience. Words which by their very utterance inflict injury or tend to incite an immediate breach of the peace, having direct tendency to cause acts of violence by the persons to whom, individually, the remark is addressed. The test is what persons of common intelligence would understand to be words likely to cause an average addressee to fight. Certain racial slurs may fall into this category. The "freedom of speech" protected by the Constitution is not absolute at all times and under all circumstances and there are well-defined and narrowly limited classes of speech, the prevention and punishment of

which do not raise any constitutional problems, including the lewd and obscene, the profane, the libelous, and the insulting or "fighting words" which by their very utterance inflict injury or tend to incite an immediate breach of the peace.

**figure**

Any drawing, graphical display, photograph, or similar entity composed of more than just text in a document.

**Filar micrometer**

A microscopic attachment used for determining the size of particles.

**file**

A collection of information or data which is stored as a single unit or within a specified restricted location (can be electronic, paper, or other type of media).

**File Transfer Protocol (FTP)**

A type of Internet site for file downloads.

**filed**

*Aviation.* Normally used in conjunction with flight plans, meaning a flight plan has been submitted to Air Traffic Control.

**filed en route delay**

*Aviation.* Any of the following preplanned delays at points/areas along the route of flight which require special flight plan filing and handling techniques: a) *Terminal Area Delay.* A delay within a terminal area for touch and go, low approach, or other terminal area activity. b) *Special Use Airspace Delay.* A delay within a Military Operating Area, Restricted Area, Warning Area, or Air Traffic Control (ATC) Assigned Airspace. c) *Aerial Refueling Delay.* A delay within an Aerial Refueling Track or Anchor.

**fill material**

Any material used for the primary purpose of replacing an aquatic area with dry land or of changing the bottom elevation of a body of water.

**fill up work**

See *internal work*.

**filling**

Depositing dirt and mud or other materials into aquatic areas to create more dry land, usually for agriculture or commercial devel-

opment. Such activities often damage the ecology of the area.

**film**

(1) A thin layer or coating. (2) A thin sheet of material (e.g., gelatin, cellulose acetate) specially treated for use in photography or radiography; also used to designate the sheet after exposure to the energy to which it is sensitive.

**film analysis**

A systematic frame-by-frame study of an activity from motion picture film.

**film analysis chart**

See *film analysis record*.

**film analysis record**

A record generated from a film analysis, containing sequential elemental motions or operations, the beginning and ending clock times, and some type of descriptive symbol. Also referred to as *film analysis chart*.

**film badge**

A pack of photographic film used for approximate measurement of radiation exposure for personnel monitoring purposes. Also called a *film dosimeter*.

**film dosimeter**

See *film badge*.

**film loop analysis**

A film analysis with a cut and spliced segment of film to form a contiguous loop for repeated viewing. See also *cassette loop analysis*.

**film ring**

A film ring badge in the form of a finger ring that is typically worn by personnel whose hands may be exposed to ionizing radiation during use of a radiation source, (e.g., operation of an x-ray diffraction unit).

**filter**

(1) *General*. Any device which removes undesired materials, noise, signal, or information. (2) *Respirator*. The media component of a respirator which removes particulate materials, such as dusts, fumes, fibers, and/or mists from inspired air. (3) *Sample*. Sampling media for collection of airborne particulate contaminants in order to determine the concentration of the material in the air. Filter media may be made of cellulose fibers, glass fibers, mixed cellulose esters (mem-

brane filter), polyvinyl chloride, Teflon, polystyrene, or other material.

**filter efficiency**

The efficiency of a filter media expressed as collection efficiency (percentage of total particles collected), or as penetration (percent of particles that pass through the filter).

**filtration**

(1) *Wastewater Treatment*. A treatment process, under the control of qualified operators, for removing solid (particulate) matter from water by passing the water through porous media such as sand or manmade filters. The process is often used to remove particles that contain pathogenic organisms. (2) *Sampling*. The process of collecting a contaminant on an appropriate filter media for determining its composition and concentration in the sampled air, as well as determining if the exposure level is acceptable or whether exposure controls must be developed and implemented. (3) *Respiratory Protection*. The process of removing a contaminant from air being inhaled.

**final**

*Aviation*. Commonly used to mean that an aircraft is on the final approach course or is aligned with a landing area.

**final approach**

*Aviation*. That part of an instrument approach procedure which commences at the specified final approach fix or point, or where such a fix or point is not specified: a) at the end of the last procedure turn, base turn or inbound turn of a racetrack procedure, if specified; or b) at the point of interception of the last track specified in the approach procedure, and ends at a point in the vicinity of an aerodrome from which a landing can be made, or a missed approach procedure is initiated.

**final approach course**

*Aviation*. A published Microwave Landing System (MLS) course, a straight line extension of a localizer, a final approach radial/bearing, or a runway centerline all without regard to distance.

**final approach fix (FAF)**

*Aviation*. The fix from which the final approach Instrument Flight Rule (IFR) to an airport is executed and which identifies the beginning of the final approach segment. It is designated on government charts by the Mal-

these Cross symbol for non-precision approaches and the lightning bolt symbol for precision approaches; or when Air Traffic Control directs a lower-than-published glideslope/path Intercept Altitude, it is the resultant actual point of the glideslope/path intercept.

**final approach point (FAP)**

*Aviation.* The point, applicable only to a non-precision approach with no depicted final approach fix (FAF) (such as an on-airport VOR), where the aircraft is established inbound on the final approach course from the procedure turn and where the final approach descent may be commenced. The final approach point (FAP) serves as the FAF and identifies the beginning of the final approach segment.

**final approach segment**

*Aviation.* That segment of an instrument approach procedure in which alignment and descent for landing are accomplished.

**final controller**

*See air traffic controller.*

**final monitor aid**

*Aviation.* A high resolution color display that is equipped with the controller alert system hardware/software which is used in the precision runway monitor (PRM) system. The display includes alert algorithms providing the target predictors, a color change alert when a target penetrates or is predicted to penetrate the no transgression zone (NTZ), a color change alert if the aircraft transponder becomes inoperative, synthesized voice alerts, digital mapping, and like features contained in the PRM system.

**final product**

Under ISO 14000, a product which requires no additional transformation prior to its use.

**finding of no significant impact (FNSI)**

A document prepared by a federal agency that presents the reasons why a proposed action would not have a significant impact on the environment and thus would not require preparation of an Environmental Impact Statement. An FNSI is based on the results of an environmental assessment. Also referred to as *FONSI*.

**FINDS**

*See Facility Index System.*

**fine**

A money sanction ordered by a government agency or court, sometimes loosely used to include civil penalties but more properly applied only to criminal fines.

**finger**

Any of the structures on the hand composed of three phalanges and the surrounding tissues of a digit.

**finger dexterity**

The ability to make rapid, coordinated finger movements using one or both hands to manipulate small objects.

**finger diameter**

The maximum medial-lateral cross-sectional diameter of a finger. Measured by a determination of the smallest diameter hole into which the finger can be inserted (specifying the digit involved).

**finger-shaping**

Providing the alternating troughs and ridges on a handle or gripping structure to accommodate the fingers and the gaps between them.

**finger nail**

The harder elastic tissue covering the dorsal portion of the terminal phalanges of the hand.

**fingerprint**

The pattern of unique whorls and ridges on the pad of the distal phalanx of each finger. Also known as *digital dermatoglyph*.

**fingertip height**

*See dacty lion height.*

**finished aviation gasoline**

All special grades of gasoline for use in aviation reciprocating engines, as given in American Society for Testing and Materials (ASTM) Specification D910 and Military Specification MIL-G-5572. Excludes blending components that will be used for blending or compounding into finished aviation gasoline. *See also gasoline.*

**finished gasohol motor gasoline**

A blend of finished motor gasoline (leaded or unleaded) and alcohol (generally ethanol, but sometimes methanol) in which 10 percent or more of the product is alcohol. *See also gasohol and gasoline.*



**finished leaded gasoline**

Contains more than 0.05 gram of lead per gallon or more than 0.005 gram of phosphorus per gallon. Premium and regular grades are included, depending on the octane rating. Includes leaded gasohol. Blend-stock is excluded until blending has been completed. Alcohol that is to be used in the blending of gasohol is also excluded.

**finished leaded premium motor gasoline**

Motor gasoline having an antiknock index, calculated as  $(R+M)/2$ , greater than 90 and containing more than 0.05 gram of lead per gallon or more than 0.005 gram of phosphorus per gallon.

**finished leaded regular motor gasoline**

Motor gasoline having an antiknock index, calculated as  $(R+M)/2$ , greater than or equal to 87 and less than or equal to 90 and containing more than 0.05 gram of lead or 0.005 gram of phosphorus per gallon.

**finished motor gasoline**

(1) A complex mixture of relatively volatile hydrocarbons, with or without small quantities of additives, blended to form a fuel suitable for use in spark-ignition engines. Specification for motor gasoline, as given in American Society for Testing and Materials (ASTM) Specification D439-88 or Federal Specification VV-G-1690B, include a boiling range of 122 degrees to 158 degrees Fahrenheit at the 10 percent point to 365 degrees to 374 degrees Fahrenheit at the 90 percent point and a Reid vapor pressure range from 9 to 15 psi. "Motor gasoline" includes finished leaded gasoline, finished unleaded gasoline, and gasohol. Blendstock is excluded until blending has been completed. Alcohol that is to be used in the blending of gasohol is also excluded. (2) Motor gasoline that is not included in the reformulated or oxygenated categories.

**finished unleaded gasoline**

Contains not more than 0.05 gram of lead per gallon and not more than 0.005 gram of phosphorus per gallon. Premium and regular grades are included, depending on the octane rating. Includes unleaded gasohol. Blend-stock is excluded until blending has been completed. Alcohol that is to be used in the blending of gasohol is also excluded.

**finished unleaded midgrade motor gasoline**

Motor gasoline having an antiknock index, calculated as  $(R+M)/2$ , greater than or equal to 88 and less than or equal to 90 and containing not more than 0.05 gram of phosphorus per gallon.

**finished unleaded premium motor gasoline**

Motor gasoline having an antiknock index, calculated as  $(R+M)/2$ , greater than 90 and containing not more than 0.05 gram of lead or 0.005 gram of phosphorus per gallon.

**finished unleaded regular motor gasoline**

Motor gasoline having an antiknock index, calculated as  $(R+M)/2$ , of 87 containing not more than 0.05 gram of lead per gallon and not more than 0.005 gram of phosphorus per gallon.

**finite element**

A small segment of a large object obtained by some standard division process.

**finite element analysis**

The use of finite elements to model force components on a large object or complex structure and draw conclusions about that object or structure as a whole.

**FIP**

See [Federal Implementation Plan](#).

**FIR**

See [flight information region](#).

**fire**

(1) Uncontrolled combustion by flame or smoke resulting in evidence of charring, melting, or other evidence of ignition. (2) The process of rapid oxidation that generally produces both heat and light. May also be referred to generally as *combustion*.

**fire alarm**

Any fire protection device or system which indicates the presence of a fire.

**fire brigade**

An organized group of employees who are knowledgeable, trained, and skilled in at least basic fire fighting operations. May also be referred to as a *private fire department* or an *industrial fire department*.

**fire classification**

A division of fires by the types of materials being burned. Briefly: *Class A* – Ordinary combustible materials (e.g., wood, paper);

*Class B* – Flammable liquid or gas (e.g., oil, paint, grease); *Class C* – Energized electrical circuits (e.g., electrical wiring, equipment); *Class D* – Combustible metals (e.g., magnesium, sodium, lithium). Portable fire extinguishers are also based on these fire classifications (i.e., they are classed for the type of fire they are capable of extinguishing). See also *Class A Fire, Class B Fire, Class C Fire, and Class D Fire*.

#### **fire detection**

The use of any fire protection device or system intended to determine that a fire is present. Usually sensitive to heat, smoke, or flame.

#### **fire door**

Any door which has been designed, tested, and rated for preventing the spread of fire.

#### **fire/explosion, fuel**

Accidental combustion of vessel fuel, liquids, including their vapors, or other substances, such as wood or coal.

#### **fire/explosion, other**

Accidental burning or explosion of any material on board except vessel fuels or their vapors.

#### **fire insurance**

A contract of insurance by which the underwriter, in consideration of the premium, undertakes to indemnify the insured against all losses in his/her houses, buildings, furniture, ships in port, or merchandise by means of accidental fire happening within a prescribed period. See also *insurance*.

#### **fire or violent rupture**

*Rail*. An accident or incident caused by combustion or violent release of material carried by or transported by rail. Examples of this type include fuel and electrical equipment fires, crankcase explosions, and violent release of liquefied petroleum or anhydrous ammonia.

#### **fire point**

The minimum temperature to which a material must be heated to sustain combustion after ignition by an external source.

#### **fire prevention**

The study and/or implementation of measures specifically designed to control ignition and fuel sources.

#### **fire protection**

The implementation of measures for preventing, detecting, controlling, and extinguishing fire to protect life and property.

#### **fire resistant**

(1) Pertaining to a normally non-combustible material which will withstand the effects of a fire. (2) With respect to sheet or structural members, it means the capacity to withstand the heat associated with fire at least as well as aluminum alloy in dimensions appropriate for the purpose for which they are used. (3) With respect to fluid-carrying lines, fluid system parts, wiring, air ducts, fittings, and powerplant controls, it means the capacity to perform the intended functions under the heat and other conditions likely to occur when there is a fire at the place concerned.

#### **fire resistive**

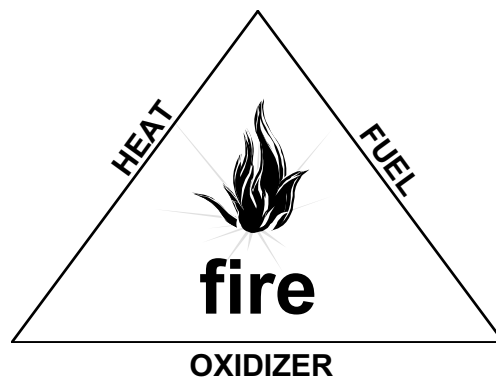
The ability of a structure or material to provide a predetermined degree of fire resistance, usually rated in hours.

#### **fire retardant**

Any material or substance which slows the progress of a fire through reduced combustibility.

#### **fire triangle**

The recognition that three elements must be present in the right proportion for a fire to exist. These are oxygen (or an oxidizing agent), fuel (or a reducing agent), and heat. Keeping the three elements of the fire triangle apart is the key to preventing fires, and removing one or more of these elements is the key to extinguishing fires that do start.



*Fire triangle concept  
(remove any one leg and a fire cannot start or an existing fire will go out)*

**fire wall**

Any self-supporting vertical structure designed to resist the horizontal spread of a fire from one enclosed region to another.

**firefighting vehicle**

A vehicle designed exclusively for the purpose of fighting fires.

**Fireman's Rule**

Doctrine which holds that professionals, whose occupations by nature expose them to particular risks, may not hold another negligent for creating the situation to which they respond in their professional capacity.

**fireproof**

According to commonly accepted terminology, the word "fireproof" is technically not an accurate term since few materials are actually incapable of "total" resistance to flame or fire. However, as defined in 14 CFR 1, the term "fireproof" means: (1) with respect to materials and parts used to confine fire in a designated fire zone, the capacity to withstand at least as well as steel in dimensions appropriate for the purpose for which they are used, the heat produced when there is a severe fire of extended duration in that zone; and (2) with respect to other materials and parts, the capacity to withstand the heat associated with fire at least as well as steel in dimensions appropriate for the purpose for which they are used.

**fireworks**

See *pyrotechnics*.

**firing circuit**

The current path between the power source and the initiating device.

**firmware**

Computer programs and data loaded in a class of memory that cannot be dynamically modified by the computer during processing. For System Safety purposes, firmware is to be treated as software.

**first aid**

(1) Any emergency care provided to an ill or injured person in order to relieve pain, counteract shock, or prevent death or further injury until better medical care becomes available.  
(2) Under OSHA 29 CFR 1904.12(e), any one-time treatment, and any follow-up visit for the purpose of observation, of minor

scratches, cuts, burns, splinters, and so forth, which do not ordinarily require medical care. Such one-time treatment, and follow-up visit for the purpose of observation, are considered first aid even though they may be provided by a physician or registered professional personnel.

**first aid injury**

Any injury requiring first aid treatment only; considered by OSHA to be non-recordable for recordkeeping purposes. See also *first aid*.

**First Amendment**

Amendment to the U.S. Constitution guaranteeing basic freedoms of speech, religion, press, and assembly and the right to petition the government for redress of grievances. The various freedoms and rights protected by the First Amendment have been held applicable to the states through the due process clause of the Fourteenth Amendment. See also *fighting words doctrine*.

**first-class lever**

A lever in which the fulcrum is located between the effort and resistance.

**first-class passenger revenue**

*Aviation.* Revenues from the air transportation of passengers moving at either standard fares, premium fares, or at reduced fares not predicated upon the use of aircraft space specifically separated from first class, and for whom standard or premium quality services are provided.

**first-class service**

*Aviation.* Transport service established for the carriage of passengers moving at either standard fares or premium fares, or at reduced fares not predicated upon the operation of specifically allocated aircraft space, and for whom standard or premium quality services are provided.

**first degree murder**

A murder committed with deliberately premeditated malice aforethought, or with extreme atrocity or cruelty, or in the commission or attempted commission of a crime punishable with death or imprisonment for life, is murder in the first degree.

**first draw**

The water that immediately comes out when a tap is first opened. This water is likely to

have the highest level of lead contamination from plumbing materials.

**first harmful event**

*Highway Transit.* (1) A first harmful event is the first event during a traffic accident that causes an injury (fatal or nonfatal) or property damage. (2) The first event during a crash that caused injury or property damage.

**first phalanx length**

The linear distance of the most proximal segment of a finger. Measured across the surfaces from the distal tip of the third metacarpal to the proximal tip of the second phalanx while the hand is held in a fist (while specifying the digit involved).

**first piece time**

The time permitted or required for the production of the first complete item in the starting sequence of several complete items.

**first-order content**

*See rate control.*

**first shift**

A day work shift of about 8 hours' duration, approximately between 7 A.M. and 5 P.M. Also called day shift or A-shift.

**first tier center**

*Aviation.* The air route traffic control center immediately adjacent to the impacted center.

**fish**

According to the Federal Outer Continental Shelf Lands Act Amendments of 1978: Fin fish, mollusks, crustaceans, and all other forms of marine animal and plant life other than marine mammals, birds, and highly migratory species.

**Fishberg concentration test**

A laboratory test used to determine the ability of the kidneys to concentrate urine. Samples of urine are collected and tested for specific gravity.

**fishy back**

*Transportation (slang).* The movement of loaded truck trailers by barge or ferry.

**fission**

A type of nuclear reaction occurring in very heavy atoms in which the nucleus, following bombardment by neutrons or other atomic particles, splits into two nuclei of nearly comparable mass, accompanied by the release of

energy. Also referred to as *atomic fission* and *nuclear fission*.

**fission products**

The products produced as a result of the splitting (fission) of a substance.

**fissionable material**

A material that can be split (fission) into other nuclei by any process. *See also fission.*

**fissure**

A narrow slit or cleft.

**fist**

A hand posture consisting of a maximal flexion of the hand in which the phalanges of digits II – V (the fingers) are tightly collapsed into the palm with the metacarpals and phalanges of digit I (the thumb) flexed to overlie the fingers.

**fist circumference**

The surface distance around the fist over the thumb and the knuckles. Measured with the thumb lying across the end of the fist.



*The human hand, in fist orientation*

**fistula**

Any abnormal, tubelike passage within body tissue.

**fit**

(1) The adequacy, suitability, and/or appropriateness of some individual, equipment, object, or structure with consideration of size, shape, conditioning, or other aspects to perform some function or fulfil a need or use. (2) A sudden, brief exhibition of emotion or motor activity.

**fit check**

See *fit test*.

**fit factor**

The value of the ratio of the outside concentration of a substance to the concentration of that substance inside a respirator/face mask during a fit test.

**fit test**

The testing of a prototype item on either a sample or potentially the population as a whole to verify that a design is acceptable, appropriate, or the best option for the environment. The term usually refers to clothing or personal protective equipment. Also referred to as *fit check*.

**fitting**

An accessory such as a lock nut, bushing, or other part of a wiring system that is intended primarily to perform a mechanical rather than an electrical function.

**Fitts' Law**

A rule for movement time prediction, in which the average movement time in a response is a function of the target separation distance and the width of the target. See also *index of difficulty*. Expressed as

$$MT = a + b \log_2 \left( \frac{2A}{W} \right)$$

where:

$MT$  = movement time  
 $A$  = distance to target  
 $W$  = width of target

**fix**

*Aviation*. A geographical position determined by visual reference to the surface, by reference to one or more radio navigational aids (NAVAIDs), by celestial plotting, or by another navigational device.

**fix balancing**

*Aviation*. A process whereby aircraft are evenly distributed over several available arri-

val fixes reducing delays and controller workload.

**fixation**

(1) The focusing and convergence of the eyes on some point or object at a distance. (2) Having a particular attachment for one technique for performing some task.

**fixation disparity**

A condition in which the visual axes intersect at some point other than in the desired fixation plane.

**fixation distance**

That distance at which the visual axes intersect.

**fixation muscle**

See *fixator*.

**fixation plane**

That fixation surface which is at such a distance from the observer that the arc may be assumed for practical purposes to be planar. See also *fixation surface*.

**fixation point**

That location in a normal individual's line of sight at which the eyes' visual axes intersect. Also referred to as *point of fixation*.

**fixation reflex**

An ocular reflex mechanism which tends to orient the eyes toward a stationary light or object or to keep the eyes oriented toward a light or object which is in motion relative to the observer.

**fixation surface**

That curved surface which is perpendicular to the observer's line of sight and which contains the fixation point of the eyes. See also *fixation plane*.

**fixative**

A chemical, such as alcohol or formaldehyde, used for the preservation of biological materials.

**fixator**

A muscle which undergoes an isometric contraction to steady a body part or segment against some other muscle contraction or against an external force. Also referred to as *fixation muscle* and *stabilizer*.

**fixed collision barrier**

A flat, vertical, unyielding surface with the following characteristics: 1) The surface is

sufficiently large that when struck by a tested vehicle, no portion of the vehicle projects or passes beyond the surface; 2) The approach is a horizontal surface that is large enough for the vehicle to attain a stable attitude during its approach to the barrier, and that does not restrict vehicle motion during impact; 3) When struck by a vehicle, the surface and its supporting structure absorb no significant portion of the vehicle's kinetic energy, so that a performance requirement described in terms of impact with a fixed collision barrier must be met no matter how small an amount of energy is absorbed by the barrier.

**fixed crane**

A crane whose principal structure is mounted on a permanent or semipermanent foundation.

**fixed dam**

A dam which does not permit the passage of marine traffic and requires the use of a lock in contrast to movable dams which, during periods of high water, are lowered to allow traffic to pass directly over the dam. Also, any dam that has a fixed height without adjustment such as a concrete spillway throughout the length of the dam exclusive of the lock chamber.

**fixed extinguishing system**

A permanently installed system that either extinguishes or controls a fire at the location of the system.

**fixed function key**

A keyboard key which directs a computer to perform some unchangeable, specific function when pressed.

**fixed guideway system**

A system of vehicles that can operate only on its own guideway constructed for that purpose (e.g., rapid rail, light rail). Federal usage in funding legislation also includes exclusive right-of-way bus operations, trolley coaches and ferryboats as "fixed guideway" transit.

**fixed linkage mechanism**

See *link*.

**fixed object**

Stationary structures or substantial vegetation attached to the terrain.

**fixed operating cost**

*Transit*. In reference to passenger car operating cost, refers to those expenditures that are

independent of the amount of use of the car, such as insurance costs, fees for license and registration, depreciation and finance charges.

**fixed route**

Service provided on a repetitive, fixed-schedule basis along a specific route with vehicles stopping to pick up and deliver passengers to specific locations; each fixed-route trip serves the same origins and destinations, unlike demand response and taxicabs.

**fixed route system**

A system of transporting individuals (other than by aircraft), including the provision of designated public transportation service by public entities and the provision of transportation service by private entities, including, but not limited to, specified public transportation service, on which a vehicle is operated along a prescribed route according to a fixed schedule.

**fixed shift**

A work shift in which the working hours remain the same over time.

**fixture**

(1) Any device at a workplace used for positioning or holding materials being assembled, worked on, or used. (2) See *lighting fixture*.

**fixture hand**

That hand being used to hold an object while the other hand performs some work on the object.

**fl**

See *footlambert*.

**flag**

*Aviation*. A warning device incorporated in certain airborne navigation and flight instruments indicating that a) instruments are inoperative or otherwise not operating satisfactorily, or b) signal strength or quality of the received signal falls below acceptable values.

**flag drop charge**

The charge for an initial distance (usually specified by regulation) for taxi service. It is actually the minimum fare.

**flame**

The electromagnetic radiation from a fire, typically referring to the visible range.

**flame arrester**

Device used in gas vent lines, and other similar locations, to arrest or prevent the passage



of flame into an enclosed space, such as a container or flammable liquid storage cabinet.

**flame ionization detector (FID)**

A carbon detector which relies on the detection of ions formed when carbon-containing material, such as a volatile or gaseous hydrocarbon, is burned in a hydrogen-rich flame. This detector is commonly used in a gas chromatograph to detect and quantify organic compounds. It is also employed in some portable instruments.

**flame photometric detector**

A detection system based on the luminescent emissions between 300 and 425 nanometers when sulfur compounds are introduced into a hydrogen-rich flame. An optical filter system is used to differentiate the sulfur compounds present from other materials. This detector finds application in gas chromatography.

**flame propagation**

The spread of a flame throughout an entire volume of a vapor-air mixture from a single source of ignition.

**flame resistant**

(1) Not susceptible to combustion to the point of propagating a flame, beyond safe limits, after the ignition source is removed. (2) The property of materials, or combinations of component materials, to retard ignition and restrict the spread of flame.

**flameout**

Unintended loss of combustion in turbine engines resulting in the loss of engine power.

**flammability range**

The difference between the lower and upper flammable limits, expressed in terms of percentage of a vapor or gas in air or oxygen by volume. *See also flammable range and upper flammability limit (UFL).*

**flammable**

(1) Any substance that is easily ignited and burns, or has a rapid rate of flame spread. (2) Capable of being ignited and burning. (3) With respect to a fluid or gas, means susceptible to igniting readily or to exploding.

**flammable atmosphere**

A surrounding gaseous environment which contains a mixture of gases or vapors within their flammable range(s).

**flammable limits**

The percent by volume limits (i.e., upper and lower flammable limits) of the concentration of a flammable gas at normal temperature and pressure in air above and below at which flame propagation does not occur on contact with a source of ignition. *See also flammability range, lower flammable limit, and upper flammable limit.*

**flammable liquid**

(1) *Class I flammable liquid.* Any liquid having a flash point below 100°F (37.8°C). (2) *Class II flammable liquids.* Any liquid having a flash point above 100°F (37.8°C) but below 140°F (60°C).

**flammable mixture**

Any combination of flammable vapor or gas and an appropriate oxidizing agent within the flammable range.

**flammable solid**

A solid material that is easily ignited and that burns rapidly.

**flanged hood**

A barrier placed around the periphery of a chemical hood to reduce air turbulence and hood entry pressure loss by keeping the hood from drawing air from behind the hood face.

**flanking buoy**

Buoy tied to the corner of a tow so pilot can tell when tow has been checked.

**flanking maneuver**

*Maritime.* Maneuvering action of a tow (when down-bound) approaching at an angle (usually 30 to 45 degrees) at bridges or locks or in sharp bends. Only the current is utilized for headway, and the engines and rudders are used to maintain the angle until just before the lead barges reach the bridge span, at which time the engines are backed and the head of the tow is swung gently in line with the opening. Then full power is applied to drive through the opening. This is the safest way that a heavy tow can make tight passages.

**flanking rudder**

*Maritime.* A rudder installed forward of the screw, used for maneuvering when the propellers are turning a stem regardless of the direction of actual movement of the towboat. *Also called backing rudders.*

**flap extended speed**

*Aviation.* The highest speed permissible with wing flaps in a prescribed extended position.

**flash**

(1) A sudden, great increase in brightness for a short period of time. (2) A highlighting technique in which a selected portion of a display momentarily increases in brightness.

**flash blindness**

A temporary inability to see detail of objects having poor illumination following a brief exposure to very intense light.

**flash burn**

(1) An inflammation of the lens of the eye due to excessive exposure to ultraviolet radiation, usually from a welding arc. (2) Any injury to tissue from sudden intense heat radiation.



*Direct (unprotected) exposure of the eye to a welding arc or other ultraviolet light source is the most common cause of flash burn injuries*

**flash point**

(1) The lowest temperature of a liquid at which there are sufficient vapors given off to form a combustible mixture in the air near the surface of the liquid. (2) That temperature at which a material, liquid or solid, will provide a sufficient quantity of vapors to ignite in the presence of an ignition source.

**flash rate**

The number of times a highlighted portion of a display increases in brightness within a specified temporal interval.

**flash resistant**

Not susceptible to burning violently when ignited.

**flashback arrester**

A mechanical device utilized on a vent of a flammable liquid or gas storage container to prevent flashback into the container, when a flammable or explosive mixture ignites outside the container.

**flasher**

In rail systems, the flashing light at railroad grade crossings that warns motorists, bicyclists, and pedestrians of approaching trains.

**flat**

(1) *General.* A smooth, level surface. (2) Having little or no gloss. (3) *Maritime-General.* A small barge with flat top used for transporting fuel or other miscellaneous cargo. (4) *Maritime-Navigation.* A place covered with water too shallow for navigation with vessels ordinarily used for commercial purposes. The space between high and low water marks along the edge of an arm of the sea, bay, tidal river, etc.

**flat car**

A rail car without a roof and walls.

**flat face**

Cab over engine configuration.

**flat pool**

The normal stage of water in the area between two dams that is to be maintained by design when little or no water is flowing; hence the pool flattens out.

**flat rate manual**

A manual published by an equipment manufacturer or an independent publisher that indicates the length of time required for performing specific mechanical tasks such as installing a clutch. Normally, the costs of parts required for a specific job are also listed.

**flatbed**

A truck or trailer without sides and top.

**flatboat**

A rectangular, flat-bottomed boat used on the western rivers during the 18th and 19th centuries.

**flatulence**

Having gas in the gastrointestinal tract.

**flatus**

Gas or air expelled from the gastrointestinal tract.

**flaw**

An imperfection or unintentional discontinuity that is detectable by nondestructive examination.

**fleet**

The vehicles in a transit system. Usually, "fleet" refers to highway vehicles and "rolling stock" to rail vehicles.

**fleet management center (FMC)**

A formally approved element of the Interagency Fleet Management System (IFMS) responsible for the administrative control of Interagency Fleet Management System (IFMS) vehicles in a specified geographic area as defined in the determination that is approved by the Administrator of General Services.

**fleet management subcenter**

A formally approved element of the Interagency Fleet Management System (IFMS) the Fleet Management Center is physically detached from the central or main Fleet Management Center.

**fleet management system (FMS)**

The automated inventory and control system used by the Interagency Fleet Management System (IFMS) to track vehicle assignments, vehicle utilization, and provide direct input to the Finance Division to bill customer agencies for the use of IFMS vehicles.

**fleet policy insurance**

Type of blanket insurance covering a number of vehicles of the same insured (e.g., covers pool or fleet vehicles owned by a business). *See also insurance.*

**fleet vehicles**

(1) Private fleet vehicles: ideally, a vehicle could be classified as a member of a fleet if it is operated in mass by a corporation or institution, operated under unified control, or used for non-personal activities; however, the definition of a fleet is not consistent throughout the fleet industry. Some companies make a distinction between cars that were bought in bulk rather than singularly, or whether they are operated in bulk, as well as the minimum

number of vessels that constitute a fleet (i.e., 4 or 10). (2) Government fleet vehicles: includes vehicles owned by all federal (GSA) state, county, city, and metro units of government, including toll road operations.

**fleeting**

Storing of barges (loaded or unloaded) until they can be moved to the unloading area or until the owner can pick them up.

**flex**

To move adjacent body segments connected by a common joint so that the angle formed by the joint and the two segments is decreased.

**flexibility**

(1) The capability for adjusting to varying conditions. (2) A measure of the mobility of a joint or a series of joints. Quantified as the range of motion, reach.

**flexibility of closure**

The ability to discover a known pattern masked by the background material.

**flexible work schedule**

*See flextime.*

**flexion**

Movement in which the angle between two bones connecting to a common joint is reduced.

**flexor**

Any muscle which causes joint flexion.

**flexor muscles**

Muscles which when contracted, decrease the angle between limb segments.

**flexor retinaculum**

The ligament which forms the carpal tunnel in the wrist through which the finger flexor tendons and the median nerve pass.

**flextime**

A work schedule in which an employee has the freedom within certain limits to choose his work starting and stopping times, but which usually includes a period of time within a given shift during which the employee must be present. Also referred to as *flextime* and *flexible work schedule*.

**flicker**

A perceptible temporal variation of brightness or movements occurring several times per

second in a display or other source within the visual field.

**flicker-free display**

A visual display unit with a refresh rate greater than 60 Hz.

**flicker fusion**

The perception of a regular, intermittent visual stimulus as continuous or steady by the eye or video sensor. May be referred to more commonly as *fusion*.

**flicker fusion frequency (fff)**

The frequency at which flicker fusion occurs. Also referred to as *critical flicker frequency*, *critical fusion frequency*, and *critical fusion frequency*.

**flicker photometry**

The use of a single field of view and rapidly alternating light sources of different colors to determine equal-appearing intensity.

**flight advisory service**

A service specifically designed to provide, upon pilot request, timely weather information pertinent to his type of flight, intended route of flight, and altitude. The flight service stations providing this service are listed in the Airport/Facility Directory. *See also flight watch.*

**flight check**

A call-sign prefix used by Federal Aviation Administration (FAA) aircraft engaged in flight inspection/certification of navigational aids and flight procedures. The word "recorded" may be added as a suffix; (e.g., "flight check 320 recorded" to indicate that an automated flight inspection is in progress in terminal areas). *See also flight inspection.*

**flight crew member**

A pilot, flight engineer, or flight navigator assigned to duty in an aircraft during flight time.

**flight deck**

(1) That region of an aircraft or spacecraft in which the flight controls and instrumentation, the pilot, and others involved in operating the vehicle are based. (2) That region of an aircraft-carrying ship on which air-support and/or ground-support operations, including launching and landing, take place.

**flight equipment**

The total cost of property and equipment of all types used in the in-flight operations of aircraft and construction work in progress.

**flight information region (FIR)**

An airspace of defined dimensions within which Flight Information Service and Alerting Service are provided.

**flight information service**

A service provided for the purpose of giving advice and information useful for the safe and efficient conduct of flights.

**flight inspection**

In-flight investigation and evaluation of a navigational aid to determine whether it meets established tolerances. *See also flight check.*

**flight level**

A level of constant atmospheric pressure related to a reference datum of 29.92 inches of mercury. Each is stated in three digits that represent hundreds of feet. For example, flight level 250 represents a barometric altimeter indication of 25,000 feet; flight level 255, an indication of 25,500 feet. *See also cardinal altitude.*

**flight line**

A term used to describe the precise movement of a civil photogrammetric aircraft along a predetermined course(s) at a predetermined altitude during the actual photographic run.

**Flight Management System**

A computer system that uses a large database to allow routes to be preprogrammed and fed into the system by means of a data loader. The system is constantly updated with respect to position accuracy by reference to conventional navigation aids. The sophisticated program and its associated database ensures that the most appropriate aids are automatically selected during the information update cycle.

**Flight Management System Procedure**

An arrival, departure, or approach procedure developed for use by aircraft with a slant (/G) equipment suffix.

**flight path**

A line, course, or track along which an aircraft is flying or intending to be flown. *See also bearing, course.*

**flight plan**

Specified information, relating to the intended flight of an aircraft, that is filed orally or in writing with air traffic control.

**flight plan area**

The geographical area assigned by regional air traffic divisions to a flight service station for the purpose of search and rescue for Visual Flight Rule (VFR) aircraft, issuance of NOTAMs, pilot briefing, in-flight services, broadcast, emergency services, flight data processing, international operations, and aviation weather services. Three letter identifiers are assigned to every flight service station and are annotated in AFDs and Order 7350.6 as tie-in-facilities.

**flight recorder**

A general term applied to any instrument or device that records information about the performance of an aircraft in flight or about conditions encountered in flight. Flight recorders may make records of airspeed, outside air temperature, vertical acceleration, engine RPM, manifold pressure, and other pertinent variables for a given flight.

**Flight Service Station (FSS)**

Air traffic facilities offering pilot briefings, en route communications, and VFR search and rescue services. Additionally, the FSS assists lost aircraft and aircraft in emergency situations; relay ATC clearances; originate Notices to Airmen; broadcast aviation weather and NAS information; receive and process IFR flight plans; monitor radio Navigation Aids (NAVAIDS). Also, at selected locations, FSSs take weather observations, issue airport advisories, and advise Customs and Immigration of transborder flight.

**flight services**

The sum of flight plans originated and pilot briefs, multiplied by two, plus the number of aircraft contacted.

**flight simulator**

A flight trainer with computer-driven functional displays and controls, possibly including motion.

**flight stage**

The operation of an aircraft from takeoff to landing.

**Flight Standards District Office**

A Federal Aviation Administration (FAA) field office serving an assigned geographical area and staffed with Flight Standards personnel who serve the aviation industry and the general public on matters relating to the certification and operation of air carrier and general aviation aircraft. Activities include general surveillance of operational safety, certification of airmen and aircraft, accident prevention, investigation, enforcement, etc.

**flight test**

A flight for the purpose of a) investigating the operation/flight characteristics of an aircraft or aircraft component, and/or b) evaluating an applicant for a pilot certificate or rating.

**flight time**

The time from the moment the aircraft first moves under its own power for the purpose of flight until the moment it comes to rest at the next point of landing. Also known as *block to block time*.

**flight trainer**

A ground-based pilot training device containing a representation of an aircraft cockpit for familiarization and basic training purposes.

**flight visibility**

The average forward horizontal distance, from the cockpit of an aircraft in flight, at which prominent unlighted objects may be seen and identified by day and prominent lighted objects may be seen and identified by night.

**flight watch**

A shortened term for use in air-ground contacts to identify the flight service station providing En Route Flight Advisory Service (e.g., "Oakland Flight Watch"). See also *flight advisory service*.

**float**

(1) *General*. To refrain from or prevent sinking. (2) *Transit*. A flatbed semitrailer. (3) *Computing*. The amount of slack in a network. (4) See *bank*.

**float light**

A 10-foot wooden platform mounted on pontoons supporting a battery-operated light. Used exclusively on the Upper Mississippi River in a certain area.



**float scaffold**

A scaffold hung from overhead supports by means of ropes and consisting of a substantial platform having diagonal bracing underneath, resting upon and securely fastened to two parallel plank bearers at right angles to the span. Also called *ship scaffold*.

**floater**

*Transit (slang)*. A driver without a steady job.

**floater insurance**

A form of insurance that applies to movable property whatever its location, if within the territorial limits imposed by the contract. *See also insurance*.

**floating crane**

A crane mounted on a barge or pontoon which can be towed or self-propelled from place to place.

**floating kidney**

A condition in which the kidney does not remain fixed in its normal position. Nephroptosis refers to a dropping of the kidney from its normal position. Surgical correction, by nephropexy, is necessary when the condition interferes with normal kidney function.

**floating pin**

A mooring pin or timber head attached to a floating tank in a lock chamber set in a guided recess in the lock walls, for mooring tows within the lock chamber whereby a short mooring line suffices without an attendant.

**floating the gears**

*Transportation (slang)*. Shifting gears without using the clutch.

**floats**

Large single tires, instead of dual tires.

**floc**

A dump of solids formed in sewage by biological or chemical action.

**flocculate**

*See agglomeration*.

**flocculation**

The process by which clumps of solids in water or sewage are made to increase in size by biological or chemical action so that they can be separated from the water.

**flood**

(1) *General*. An uncontrolled overrun of a liquid (usually water) into an area where it is not normally expected to be in such great quantities. (2) *Computing*. To send multiple messages to the viewing screen, with clearing or scrolling of the screen before all can be read.

**flood insurance**

Insurance indemnifying against loss by flood damage. Required by lenders in areas designated as potential flood areas. The insurance is privately issued but federally subsidized. *See also insurance*.

**flood plain**

An area which is subject to periodic flooding. *See also floodplain*.

**flood stage**

Condition of the river when it rises above a stage predetermined by the Corps of Engineers to be designated as flood stage. Also, the stage at which some part of the main bank may be overflowed, but not necessarily all of it.

**floodgate**

Gate placed across/along a channel to control floodwater or a gate across a roadway in levee. *See also gate and tidegate*.

**flooding**

Filling with water, regardless of method of ingress, but retaining sufficient buoyancy to remain on the surface.

**floodplain**

Land adjacent to rivers which, because of its level topography, floods when a river overflows. *See also flood plain*.

**floodwater**

Waters which escape from a stream or other body of water and overflow adjacent territory, under conditions which do not usually occur.

**floor hole**

An opening measuring less than 12 inches but more than 1 inch in its least dimension, in any floor, platform, pavement, or yard, through which materials but not persons may fall; such as a belt hole, pipe opening, or slot opening.



**floor opening**

An opening measuring 12 inches or more in its least dimension, in any floor, platform, pavement, or yard, through which persons may fall; such as a hatchway, stair or ladder opening, pit, or large manhole. Floor openings occupied by elevators, dumb waiters, conveyors, machinery, or containers are excluded from this definition (OSHA 29 CFR 1910.21(a)(2)).

**floor reference plane**

(1) That plane through the floor reference point and perpendicular to the local vertical axis. (2) That point on a floor or other base surface which provides an origin for representing all other coordinates within the volume of interest.

**floor sweep**

A vapor collection system designed to capture vapors which are heavier than air and which collect along the floor.

**floppy disk**

A flexible plastic disk used as a common form of external storage for information in a micro-computer system.

**flow analysis**

An examination of the progressive sequence of activities and locations of personnel, equipment, and materials involved in the performance of a particular task or operation.

**flow control**

*Aviation.* Measures designed to adjust the flow of traffic into a given airspace, along a given route, or bound for a given aerodrome (airport) so as to ensure the most effective utilization of the airspace.

**flow diagram**

A scaled graphic/pictorial representation of the layout and locations of activities or operations and the flow paths of materials between activities in a process.

**flow line**

See *flow path*.

**flow meter**

A gauge that shows the speed of wastewater moving through a treatment plant. Also used to measure the speed of liquids moving through various industrial processes.

**flow path**

The route(s) taken by personnel, equipment, and materials involved in production as the manufacturing process continues. Also called *flow line* or *line of flow*.

**flow process chart**

A graphic/symbolic representation using standardized symbols for the manipulations involved for an item through each of the various steps required. See also *process chart*, *process chart symbol*, *worker-type flow process chart*, *material-type flow process chart*, and *equipment-type flow process chart*.

**flow rate**

The volume per time unit (e.g., liters per minute, etc.) given to the flow of air or other fluid by the action of a pump, fan, etc.

**flowchart**

A diagram consisting of standardized symbols which enclose text and/or other symbols and are governed by specific layout rules for describing the steps involved in a given operation.

**FLSA**

See [Fair Labor Standards Act](#).

**FLSC**

Flexible linear-shaped charge.

**flue**

A pipe or other channel through which combustion air, smoke, steam, or other material is vented to the atmosphere.

**flue gas**

The air coming out of a chimney after combustion in the burner it is venting. It can include nitrogen oxides, carbon oxides, water vapor, sulfur oxides, particles, and many chemical pollutants.

**flue gas desulfurization**

A technology which uses a sorbent, usually lime or limestone, to remove sulfur dioxide from the gases produced by burning fossil fuels. Flue gas desulfurization is currently the state-of-the-art technology in use by major sulfur dioxide emitters, such as power plants.

**fluence**

The number of particles or photons passing per unit area, usually square centimeter. Also referred to as *radiation fluence*.

**fluid**

(1) A material that flows readily in the natural state; a liquid or gas. (2) Composed of elements that yield to pressure without disruption of the mass. (3) One of the ultimate states of matter, being composed of molecules that can move about within limits, permitting change in the shape of the mass without disruption of the substance.

**fluid balance**

A physiological state in which water intake equals water loss. Also referred to as *water balance*.

**flume**

A natural or manmade channel that diverts water.

**fluorence**

A hue similar to fluorescent materials.

**fluorescence**

Phenomenon involving the absorption of radiant energy by a substance (usually a crystal) and its re-emission as visible or near-visible light.

**fluorescent lamp**

A light source which operated by passing an electrical current through a closed tube containing mercury vapor and one or more suitable fluorescing powders coating the interior surface of the tube.

**fluorescent screen**

A sheet of material coated with a substance (usually calcium tungstate or zinc sulfide) that will emit light when irradiated with ionizing radiation.

**fluoridation**

The addition of a fluoride, a chemical salt containing fluorine, to drinking water. This has been found to reduce the occurrence of dental caries in children by one-half. Minute traces of fluoride are found in almost all food, but the quantity apparently is too small to meet the requirements of the body in building tooth enamel that resists cavities.

**fluorides**

Gaseous, solid, or dissolved compounds containing fluorine that result from industrial processes. Excessive amounts in food can lead to fluorosis.

**fluorine**

A chemical element, atomic number 9, atomic weight 18.998, symbol F.

**fluorocarbon**

Any of a number of organic compounds analogous to hydrocarbons in which one or more hydrogen atoms are replaced by fluorine.

**fluoroscope**

A screen mounted in front of an x-ray tube used for indirect visualization of internal body organs or internal structures of inanimate objects.

**fluorosis**

An abnormal condition caused by excessive intake of fluorine, characterized chiefly by mottling of the teeth.

**flush**

(1) To open a cold water tap to clear out all the water which may have been sitting for a long time in the pipes. In new homes, to flush a system means to send large volumes of water gushing through the unused pipes to remove loose particles of solder and flux. (2) To force large amounts of water through liquid to clean out piping or tubing, storage or process tanks.

**flush-mounted**

Pertaining to any piece of equipment which is embedded within a structure such that the exposed surface of the equipment is level with the structure surface.

**flutter**

(1) Any deviation in frequency of the reproduced sound from the original sound. (2) Any low-frequency vibration of an object capable of such vibration. (3) A tremulous, generally ineffective movement.

**flux**

(1) *Electromagnetic Radiation*. The number of visible-light photons, gamma-ray photons, neutrons, particles, or energy crossing a unit surface area per unit time. The units of flux are the number of particles (or energy, etc.) per square centimeter per second. (2) *Soldering*. A substance used to clean the surface and promote fusion in a soldering procedure.

**fly**

(1) To control an aircraft or spacecraft in flight, generally including takeoff and land-

ing. (2) A two-winged insect that is often the vector of organisms causing disease.

**fly ash**

Noncombustible residual particles from the combustion process, carried by flue gas.

**fly-by-wire**

A technique for controlling aircraft in which a digital signal carried by wire to hydraulic actuators in the wings and tail which move the flight control surfaces.

**fly-fix-fly**

A description of the early approach to system safety, with reference to the aviation industry, that focused upon an after-the-fact method of designing safe systems.

**fly heading (degrees)**

*Aviation.* Informs the pilot of the heading he should fly. The pilot may have to turn to, or continue on, a specific compass direction in order to comply with the instructions. The pilot is expected to turn in the shorter direction to the heading unless otherwise instructed by ATC.

**flyaway value**

*Aviation.* Includes the cost of the airframe, engines, electronics, communications, armament, and other installed equipment.

**flyback method**

*See repetitive timing.*

**flybar**

A system which provides airspeed, turn, and bank indications via auditory signals, instead of the conventional visual flight instruments.

**flyer**

*Transit (slang).* A run in which the driver takes a trailer to a distant terminal, leaves it there and immediately pulls another trailer back to his home terminal.

**flying operations expenses**

*Aviation.* Expenses incurred directly in the in-flight operation of aircraft and expenses related to the holding of aircraft and aircraft operational personnel in readiness for assignment for an in-flight status.

**flying orders**

*Transit.* Trip instructions issued to a driver by his/her dispatcher.

**FM**

*See Factory Mutual Association.*

**FMC**

*See fleet management center.*

**FMCSR**

*See Federal Motor Carrier Safety Regulations.*

**FMEA**

*See failure mode and effect analysis.*

**FMS**

*See fleet management system.*

**FNSI**

*See finding of no significant impact.* Also referred to as *FONSI*.

**FO**

*See free out.*

**foam**

(1) A fluid mixture of bubbles which floats on or flows over a surface. (2) A stable aggregation of small bubbles which flow freely over a burning liquid surface and form a coherent blanket which seals combustible vapors and thereby extinguishes the fire.

**foamed buoy**

A buoy whose interior is filled with styrofoam for the purpose of improving flotation when in a damaged condition.

**FOB**

*See free on board.*

**focal mechanism**

In seismology, the direction and sense of slip on a fault plane at the point of origin (see *hypocenter*) of an earthquake, as inferred from the first seismic waves which arrive at various locations. Often, they are drawn on maps with a "baseball-like" symbol. The dark areas denote compression, the white areas denote dilation. The fault plane which moved is parallel to one of the two planes dividing the sphere in half.

**focus**

(1) The point of convergence of light rays or sound waves. (2) *See hypocenter.*

**focused attention**

*See selective attention.*

**Foehn**

*See Chinook.*

**fog**

A term loosely applied to visible aerosols, less than 40 microns in diameter, that are liquid;

formation by condensation is sometimes implied. Basically, fog is a cloud with its base at the earth's surface. It reduces visibility to below 1 kilometer.

**fog lamps**

Car lamps, installed just above the front bumper, designed to give better lighting during foggy weather.

**fogging**

Applying a pesticide by rapidly heating the liquid chemical so that it forms very fine droplets that resemble smoke or fog. It may be used to destroy mosquitoes, black flies, and similar pests.

**FOIA**

See *Freedom of Information Act*.

**folliculitis**

The inflammation of follicles, particularly hair follicles.

**follower**

Any selected object on a display which is moved by manipulation of a control.

**fomites**

Intimate personal articles, such as clothing, a drinking glass, a handkerchief, etc.

**font**

The size and style of written type.

**font change**

A highlighting technique in which a different font, different pitch, point size, or representation of the same font, or some other alteration is used.

**food**

According to the Federal Food, Drug, and Cosmetic Act: (1) articles used for food or drink for man or other animals, (2) chewing gum, and (3) articles used for components of any such article.

**food additive**

According to the Federal Food, Drug, and Cosmetic Act: Any substance the intended use of which results or may reasonably be expected to result, directly or indirectly, in its becoming a component or otherwise affecting the characteristics of any food (including any substance intended for use in producing, manufacturing, packing, processing, preparing, treating, packaging, transporting, or holding food; and including any source of radiation

intended for any such use), if such substance is not generally recognized among experts qualified by scientific training and experience to evaluate its safety as having been adequately shown through scientific procedures (or, in the case of a substance used in food prior to January 1, 1958, through either scientific procedures or experience based on common use in food) to be safe under the conditions of its intended use.

**Food and Drug Administration (FDA)**

Agency within the Department of Health and Human Services established to set safety and quality standards for foods, drugs, cosmetics, and other household substances sold as consumer products. Among the basic tasks of the FDA are research, inspection, and licensing of drugs for manufacturing and distribution. This agency is in charge of administering the Food, Drug, and Cosmetic Act.

**Food and Drug Administration Action Level (FDAAL)**

Under the Federal Food, Drug, and Cosmetic Act, as amended, concentration of a poisonous or deleterious substance in human food or animal feed at or above which FDA will take legal action to remove adulterated products from the market. Only FDAALs established for fish and shellfish apply in the Hazard Ranking System.

**food chain**

A sequence of organisms, each of which uses the next, lower member of the sequence as a food source.

**Food, Drug Cosmetic Act**

Federal Act of 1938 prohibiting the transportation in interstate commerce of adulterated or misbranded food, drugs, and cosmetics. The Act is administered by the Food and Drug Administration.

**food engineering**

The implementation of food science and technology in the manufacturing, processing, and packaging of food items.

**food poisoning**

A broad term including foodborne illnesses caused by the ingestion of foods containing microbial toxins or chemical poisons. See also *foodborne disease*.

**food waste**

The organic residues generated by the handling, storage, sale, preparation, cooking, and serving of foods. Commonly called *garbage*.

**foodborne disease**

Any disease that is transmitted through food contaminated with bacteria, viruses, fungi, parasites, or even some toxic chemicals.

**foot**

(1) *Anatomy*. That bodily structure composed of the phalanges, metatarsal, cuneiform, navicular, cuboid, talus, and calcaneus bones with their associated, surrounding tissues. (2) *Measurement*. A unit of length in the English system; equal to 12 inches.

**foot acre**

One acre of coal one foot thick.

**foot breadth**

The maximum width of the foot measured perpendicular to its longitudinal axis. Measured with the individual standing and his/her weight distributed evenly on both feet.

**foot-candle (fc)**

The illumination resulting from the uniform distribution of a flux of one lumen (lm) on a surface area of one square foot. Hence, one foot candle equals one lumen per square foot.

**foot control**

Any control device intended for normal operation using a foot.

**foot lambert**

The unit of photometric brightness equal to the uniform brightness of a perfectly diffusing surface emitting or reflecting one lumen per square foot.

**foot-leg**

Involving both the foot and the leg, generally pertaining to sensory or other external influences on both the foot and the leg.

**foot length**

The maximum length of the foot measured parallel to its long axis, from the back of the heel to pternion. Measured without tissue compression, with the individual standing erect and his/her weight evenly distributed on both feet.

**foot-pound**

An English system measure of torque; equal to one pound of force acting at a distance of one foot from the fulcrum.

**foot restraint**

A platform structure which serves to immobilize one or both feet to hold an individual in position for performing a task.

**footbar**

A rod or molded tube which serves as a footrest for a chair when the seat pan of the chair is too high for the feet to reach the floor or another surface.

**footfall**

The striking of the bottom of the foot or footwear on a surface in human gait.

**footlambert (fl)**

A unit of luminous intensity; the luminance of a surface which receives 1.0 lumen per square foot (an outdated measure).

**footprints**

In the law of evidence, impressions made upon the earth, snow, or other surface by the feet of persons, or by their shoes, boots, or other foot coverings.

**footrest**

Any structure on which the foot may rest, usually when seated.

**footrest angle**

The angle between a footrest having a flat surface and the lower leg link.

**footring**

A tube or rod attached in a circular pattern about the legs of a stool or chair as a footrest when the seat pan is too high for the feet to reach the floor or other base surface.

**footstool**

A short structure which is easily portable and may be stood upon to improve one's vertical reach.

**footswitch**

Any type of switch which closes when the foot or some portion of the foot makes contact with the floor or ground.

**footwall**

*Seismology*. Of the two sides of a non-vertical fault, the side below the fault plane. It is called the footwall because where faults have been "filled in" with mineral deposits and then mined, this is the side on which miners walk. *See also hanging wall*.

**footwear**

Any type of material or covering worn over the foot.

**for hire**

Refers to a vehicle operated on behalf of or by a company that provides transport services to its customers.

**for-hire carriage**

Transportation of property by motor vehicle except when a) the property is transported by a person engaged in a business other than transportation; and b) the transportation is within the scope of, and furthers a primary business (other than transportation) of, the person.

**for-hire motor carrier**

A person engaged in the transportation of goods or passengers for compensation.

**foramen**

A natural opening or passage; used as a general term in anatomic nomenclature to designate such a passage, especially on or into a bone.

**forbidden or not acceptable explosives**

Any explosives which are forbidden or not acceptable for transportation by common carriers by rail freight, rail express, highway, or water in accordance with the regulations of the U.S. Department of Transportation.

**force**

(1) The push or pull that tends to impart motion to a body at rest, or to increase or diminish speed, or to change the direction of a body already in motion. (2) A physical influence exerted on an object which tends to cause a change in velocity.

**force arm**

See *effort arm*.

**force feedback**

Any means of providing information to an operator about the forces involved on a remote or teleoperated end effector.

**force joystick**

See *isometric joystick*.

**force majeure**

The title of a standard clause found in marine contracts exempting the parties for non-fulfillment of their obligations by reasons of occurrences beyond their control, such as earthquakes, floods, or war.

**force plate**

A system consisting of a cover plate and one or more transducers for measuring the forces or accelerations of an object either positioned on the cover or as the object strikes the cover plate. Also referred to as *force platform* and *reactance platform*.

**force reflection**

Providing an operator or system with tactile information about the forces/torques experienced by a remote device.

**force-velocity curve**

A graphical plot showing a characteristic of concentric muscular contractions in which the velocity of a muscular contraction is inversely related to the force of the contraction. May also be referred to as *force-velocity relationship*.

**forced choice**

An experimental methodology in which a subject must make a selection from one of the available choices.

**forced convection**

On a small scale, a form of mechanical stirring taking place when twisting eddies of air are able to mix hot surface air with the cooler air above. On a larger scale, it can be induced by the lifting of warm air along a front (frontal uplift) or along a topographic barrier (orographic uplift). See also *convection*.

**forced draft**

The positive pressure created by air being blown into a furnace or other combustion equipment by a fan or blower.

**forced expiratory volume-one second (FEV-1)**

The maximum volume of air that can be forced from an individual's fully inflated lungs in one second.

**forced grasping**

A movement disorder in the adult in which the victim grasps any object which touches his/her hand, frequently with great strength. (Note: Different from the normal grasp reflex.)

**forced vital capacity (FVC)**

The volume of air that can be forcibly expelled from the lungs after a full inspiration of air.



**ford**

The shallow part of a river which can be easily crossed.

**Fordyce's disease**

A congenital condition characterized by minute yellowish white papules on the oral mucosa.

**fore and aft**

The direction on a vessel parallel to the centerline

**fore and aft line**

A line used to secure two barges end to end.

**fore bay**

An enclosure of the river, usually above a dam.

**forearm**

The radius, ulna, and all other organized tissues comprising that part of the arm from the elbow to the wrist.

**forearm circumference**

The surface distance around the forearm at the level at which the maximum value is obtained. Measured with the individual standing erect, the shoulder slightly abducted, and the hand relaxed with the fingers extended. May be referred to as *arm circumference*.

**forearm circumference, elbow flexed**

The maximum surface distance around the forearm with the elbow flexed 90 degrees. Measured with the shoulder flexed 90 degrees laterally (so that the upper arm is horizontal), and the fist clenched.

**forearm circumference, relaxed**

The maximum surface distance around the forearm. Measured with the elbow flexed 90 degrees and the hand relaxed.

**forearm – forearm breadth, sitting**

The horizontal linear distance from the most lateral point on the right forearm, across the body to the most lateral point on the left forearm. Measured without tissue compression, with the individual seated erect, the upper arms hanging naturally at the sides, and the elbows flexed 90 degrees while resting lightly against the torso

**forearm – hand length**

The distance from the posterior elbow to the tip of the longest finger. Also referred to as *elbow – fingertip length*. Measured with the

individual seated erect, the upper arm vertical at the side, the forearm and hand horizontal, and the fingers maximally extended.

**forearm length**

See *radiale – styliion length*.

**forearm skinfold**

The thickness of a vertical skinfold on the posterior midline of the forearm at the level of the forearm circumference. Measured with the individual standing erect and the arms relaxed naturally at the sides.

**forefinger**

See *index finger*.

**forefinger length**

See *index finger length*.

**forefoot**

The anterior portion of the foot, including the phalanges, metatarsals, cuneiform, and cuboidal bones and the soft tissues surrounding them.

**forehead**

That superior portion of the face from the supraorbital ridges upward and between the maximum lateral bulges of the brow ridges near the ends of the eyebrow. May be referred to as *brow* or *frons*. See also *eyebrow*.

**forehead breadth**

See *frontal breadth (maximum)*, and *frontal breadth (minimum)*.

**foreign**

With regard to commerce, refers to outside the fifty United States and the District of Columbia.

**foreign air carrier**

Any person other than a citizen of the United States, who undertakes directly, by lease or other arrangement, to engage in air transportation. See also *foreign flag air carrier*.

**foreign air commerce**

The carriage by aircraft of persons or property for compensation or hire, or the carriage of mail by aircraft, or the operation or navigation of aircraft in the conduct or furtherance of a business or vocation, in commerce between a place in the United States and any place outside thereof; whether such commerce moves wholly by aircraft or partially by aircraft and partially by other forms of transportation.

**foreign air transportation**

The carriage by aircraft of persons or property as a common carrier for compensation or hire, or the carriage of mail by aircraft, in commerce between a place in the United States and any place outside of the United States, whether that commerce moves wholly by aircraft or partially by aircraft and partially by other forms of transportation.

**foreign body**

Usually refers to any material that has entered and/or become imbedded in a body part (such as the eye). Examples of foreign bodies can include splinters, slivers, dirt, etc.

**foreign current**

A term applied to stray electric currents which may affect a signaling system, but which are not a part of the system.

**foreign element**

A work element which is not normally part of the work cycle and provides an interruption to it, usually with a random/unpredictable frequency of occurrence.

**foreign exchange gains and losses**

Gains or losses resulting from nonroutine abnormal changes in the rates of foreign exchange.

**foreign flag air carrier**

(1) An air carrier other than a United States flag air carrier in international air transportation. "Foreign air carrier" is a more inclusive term than "foreign flag air carrier," including those non-U.S. air carriers operating solely within their own domestic boundaries. In practice, the two terms are used interchangeably. (2) An air carrier other than a United States flag air carrier providing international air transportation. Certificated in accordance with Federal Aviation Regulations Part 129. *See also [foreign air carrier](#).*

**foreign fleet**

All reportable agency-owned motor vehicles, operated outside any State, Commonwealth, Territory or possession of the United States.

**foreign freight**

Movements between the United States and foreign countries and between Puerto Rico, the Virgin Islands, and foreign countries. Trade between U.S. territories and possessions (e.g., Guam, Wake, American Samoa)

and foreign countries is excluded. Traffic to or from the Panama Canal Zone is included.

**foreign freight forwarder**

An independent business which makes shipments for exporters for a fee.

**foreign mail**

Mail transported outside the United States by U.S. flag carriers on behalf of any foreign government.

**foreign trade**

The exchange of waterborne commodity movements (imports and exports) between the United States and its territories, and foreign countries.

**foreign trade zone**

An isolated area, attached to a port, where facilities for dockage and unloading are provided, and where foreign merchandise may be stored or manipulated pending sale or reshipment without limitation as to time and without compliance with the customs laws and regulations relating to the entry of merchandise. Most such privileges are equally available at other regular ports of entry by arrangement with U.S. Customs Bureau.

**forensic**

Belonging to the courts of justice.

**forensic engineering**

The application of the principles and practices of engineering to the elucidation of questions before courts of law. Practiced by legally qualified professional engineers who are experts in their field, by both education and experience, and who have experience in the courts and an understanding of jurisprudence. A forensic engineering engagement may require investigation, studies, evaluations, advice to counsels, reports, advisory opinions, depositions and/or testimony to assist in the resolution of disputes relating to life or property in cases before courts, or other lawful tribunals.

**forensic medicine**

That science which teaches the application of every branch of medical knowledge to the purposes of the law. Hence its limits are, on the one hand, the requirements of the law, and, on the other hand, the whole range of medicine. Anatomy, physiology, medicine, surgery, chemistry, physics, and botany lend

their aid as necessity arises; and in some cases all these branches of science are required to enable a court of law to arrive at a proper conclusion on a contested question affecting life or property.

**forensic pathology**

That branch of medicine dealing with diseases and disorders of the body in relation to legal principles and cases.

**forensic psychiatry**

That branch of medicine dealing with disorders of the mind in relation to legal principles and cases.

**foreseeability**

A concept in which an individual may be held liable for actions resulting in injury or damage only if he/she could be reasonably expected to foresee the risk or danger.

**foreseeable damages**

Loss that the party in breach had reason to know of when the contract was made.

**foreshock**

Any earthquake which is followed, within a short time span, by a larger earthquake in the exact same location can be labeled a "foreshock." (In the case of an earthquake *swarm*, this terminology is not generally applied.)

**foreshore**

The part of a seashore between high-water and low-water marks.

**forestall**

As applied to an automatic train stop or train control device, to prevent an automatic brake application by operation of an acknowledging device or by manual control of the speed of the train.

**forklift truck**

A high-powered vehicle equipped with hydraulic-driven protruding metal blades, that is used to raise and lower unitized freight and/or handle other material(s).

**form**

A display or hardcopy with organized categories for the user or operator to fill in.

**form analysis chart**

See *form process chart*.

**form process chart**

A flow process chart for one or more paperwork forms. Also referred to as *information process analysis*, *functional form analysis*, *form analysis chart*, *paperwork flow chart*, and *procedure flow chart*.

**formal rulemaking**

The process of promulgating rules based upon the formal procedures established in the Administrative Procedures Act (APA) of 1946 requiring (most notably) hearings, substantiation of evidence, and the cross-examination of witnesses.

**formaldehyde**

A colorless, pungent, irritating gas (CH<sub>2</sub>O) used chiefly as a disinfectant and preservative and in synthesizing other compounds and resins.

**formant**

A resonance which is associated with vocal tract reflections in the production of sound.

**formation flight**

More than one aircraft which, by prior arrangement between the pilots, operate as a single aircraft with regard to navigation and position reporting.

Separation between aircraft within the formation is the responsibility of the flight leader and the pilots of the other aircraft in the flight. This includes transition periods when aircraft within the formation are maneuvering to attain separation from each other to effect individual control and during join-up and breakaway.

A *standard formation* is one in which a proximity of no more than 1 mile laterally or longitudinally and within 100 feet vertically from the flight leader is maintained by each wingman.

*Nonstandard formations* are those operating under any of the following conditions: a) when the flight leader has requested and Air Traffic Control (ATC) has approved other than standard formation dimensions; b) when operating within an authorized altitude reservation (ALTRV) or under the provisions of a letter of agreement; c) when the operations are conducted in airspace specifically designed for a special activity. See also *altitude reservation*.



*F-18 Hornets flying in formation flight*

### **formed elements**

The enclosed structures within the blood, consisting of erythrocytes, leukocytes, and platelets.

### **formite**

Any substance that may harbor or transmit pathogenic organisms.

### **formulation**

The substance or mixture of substances which is comprised of all active and inert ingredients in a pesticide.

### **formulation time**

The temporal period required for the end-user and manufacturer to determine what characteristics a desired system should have.

### **Fortran**

A high-level computer language designed for scientific and mathematical use with the name of Formula Translator and the acronym, Fortran.

### **forward chaining**

A reasoning or control strategy in which the starting point is selected and all possible resulting states are derived from that point.

### **forward control**

*Transportation.* (1) A configuration in which more than half of the engine length is rearward of the foremost point of the windshield base and the steering wheel hub is in the forward quarter of the vehicle length. (2) Vehicle with driver controls (pedals, steering wheel, instruments) located as far forward as possible. Supplied with or without body, the controls are stationary mounted as opposed to the special mountings of tilt cabs.

### **forward masking**

A form of temporal masking in which the masking stimulus just precedes the test stimulus.

### **forward wing**

*Aviation.* A forward-lifting surface of a canard configuration or tandem-wing configuration airplane. The surface may be a fixed, movable, or variable geometric surface, with or without control surfaces.

### **fossa**

A depression in the surface of a bone.

### **fossil fuel**

(1) Fuel, such as natural gas, petroleum, coal, etc., that originated from the remains of plant, animal, and sea life of previous geological eras. (2) Any naturally occurring organic fuel, such as petroleum, coal, and natural gas.

### **fossil water**

*See connate water.*

### **foul bill of lading**

A receipt for goods issued by a carrier with an indication that the goods were damaged when received.

### **foul ground**

An area identified as a danger to maritime navigation where the holding qualities for an anchor are poor, or where danger exists of striking or fouling the ground or other obstructions.

### **fouling section**

*Rail Operations.* The section of track between the switch points and the clearance point in a turnout.

### **foundation**

A structural, knowledge, or economic base which enables further growth or development.

### **foundation garment**

Underwear (an older term).

### **four banger**

*Transit (slang).* Term used to describe a four-cylinder engine.

### **four by four**

Four-speed transmission and 4-speed auxiliary transmission.

### **four ps**

In evidence collection following an accident, the phrase given to the four common categories of people, parts, papers, and positions.

### **Fourier analysis**

The mathematical decomposition of a complex periodic waveform into its sinusoidal

components. Often used with non-periodic waveforms to get frequency components.

#### **Fourteenth Amendment**

Amendment to the U.S. Constitution, ratified in 1868, creates or at least recognizes for the first time a citizenship of the United States, as distinct from that of the states; forbids the making or enforcement by any state of any laws abridging the privileges and immunities of citizens of the United States; and secures all "persons" against any state action which results in either deprivation of life, liberty, or property without due process of law, or, in denial of equal protection of the laws. This Amendment also contains provisions concerning the apportionment of representatives in Congress.

#### **Fourth Amendment**

Amendment of the U.S. Constitution guaranteeing people the right to be secure in their homes and protect their property against unreasonable searches and seizures and providing that no warrants shall issue except upon probable cause and then only as to specific places to be searched and persons and things to be seized.

#### **fovea**

A depressed region within the macula lutea of the posterior retina at which cone density is highest and the greatest visual acuity occurs. Also referred to as *fovea centralis*.

#### **foveal blindness**

The lack of visual capability in the center of the visual field, due to damage or other problem with the fovea or macula lutea. Also referred to as *central visual field blindness*.

#### **foveal vision**

That photopic sensory stimulation mediated by the fovea.

#### **FR**

See *Federal Register*.

#### **FRA**

See *Federal Railroad Administration*.

#### **fractionation**

Any of several processes, apart from radioactive decay, that result in change in the composition of radioactive debris.

#### **fracture**

A sudden break or crack in a bone or other solid material. It may be caused by trauma,

by twisting due to muscle spasm or indirect loss of leverage, or by disease that results in decalcification of the bone.

#### **fracture control**

The application of design philosophy, analysis method, manufacturing technology, quality assurance, and operating procedures to prevent premature structural failure due to the propagation of cracks or crack-like flaws during fabrication, testing, transportation and handling, and service.

#### **fracture mechanics**

An engineering concept used to predict flaw growth of materials and structures containing cracks or crack-like flaws; an essential part of a fracture control plan to prevent structure failure due to flaw propagation.

#### **fracture toughness**

A generic term for measures of resistance to extension of a crack.

#### **frame**

One complete scan or image on a CRT, videotape, motion picture film, or other type of display.

#### **frame counter**

Any electrical, mechanical, or electromechanical device which is used to determine and/or display a count of the number of frames displayed on a film or video medium.

#### **frame rate**

The number of frames recorded or displayed per unit time.

#### **frangible navigational aid**

*Aviation.* A navigational aid whose properties allow it to fail at a specified impact load.

#### **Frankfort plane**

An imaginary plane through the head, used for head orientation purposes, established by the lateral extensions of a line between trignon and the lowest point of the orbit. Also referred to as *Frankfort horizontal plane*.

#### **fraud**

(1) An intentional perversion of truth for the purpose of inducing another in reliance upon it to part with some valuable thing belonging to him/her or to surrender a legal right. (2) A false representation of a matter of fact, whether by words or by conduct, by false or misleading allegations, or by concealment of



that which should have been disclosed, which deceives and is intended to deceive another so that he/she shall act upon it to his/her legal injury. (3) Anything calculated to deceive, whether by a single act or a combination, or by suppression of the truth, or suggestion of what is false, whether it be by direct falsehood or innuendo, by speech or silence, word of mouth, or look or gesture.

**free alongside ship (FAS)**

*Maritime.* A price quotation under which the exporter quotes a price that includes delivery of the goods to the vessel's side and within reach of its loading tackle. Subsequent risks and expenses are for the account of the buyer.

**free alongside ship (FAS) value**

*Maritime.* The value of a commodity at the port of exportation, generally including the purchase price plus all charges incurred in placing the commodity alongside the carrier at the port of exportation in the country of exportation.

**free chlorine residual**

Portion of the total residual chlorine remaining at the end of a specific contact time which will react as hypochlorous acid or hypochlorite ion.

**free convection**

*See convection.*

**free field**

*See free sound field.*

**free-field room**

An enclosed volume which provides essentially a free sound field. *See also anechoic room.*

**free float**

That calculated additional time available for an activity from the earliest possible completion time of that activity and the earliest possible beginning of the next activity linked to it in a network.

**free in**

*Maritime.* A pricing term indicating that the party who charters a vessel is responsible for the cost of loading goods onto the vessel.

**free in and out**

*Maritime.* Terms under which cost of loading and discharging cargo is borne by parties other than the vessel owner or operator.

**free of particular average**

A marine insurance term meaning that insurer will not allow payment for partial loss or damage to a foreign shipment.

**free on board (FOB)**

(1) A price quotation under which the exporter quotes a price that includes delivery of the goods on board the vessel. Subsequent risks and expenses are for the account of the buyer. (2) A transaction whereby the seller makes the product available within an agreed-upon period at a given port at a given price. It is the responsibility of the buyer to arrange for the transportation and insurance.

**free on board (FOB) airport**

FOB airport is based on the same principle as the ordinary FOB term. The seller's obligation includes delivering the goods to the air carrier at the airport of departure. The risk of loss or damage to the goods is transferred from the seller to the buyer when the goods have been so delivered. *See also free on board.*

**free out (FO)**

Terms under which the owner of goods is responsible for discharging costs.

**free port**

A restricted area at a seaport for the handling of duty-exempted import goods.

**free radical**

An atom or a chemically combined group of atoms which have a free electron and are very chemically reactive.

**free-running rhythm**

A biological rhythm without the use of entrainment cues, often resulting in a slight change of period.

**free silica**

Silica in the form of cristobalite, tridymite, or alpha quartz.

**free sound field**

A sound field in which the boundary effects are negligible over the frequencies of interest. *See also far field.*

**free time**

The amount of time that a carrier's equipment may be used without incurring additional charges.



**free trade zone**

A port designated by the government of a country for duty-free entry of any non-prohibited goods. Merchandise may be stored, displayed, used for manufacturing, etc. within the zone and re-exported without duties.

**Freedom of Information Act (FOIA)**

Allows all U.S. citizens and residents to request any records in possession of the executive branch of the federal government. The term "records" includes documents, papers, reports, letters, films, photographs, sound recordings, computer tapes and disks. An object that cannot be reproduced is not considered a record in this case. The federal Freedom of Information Act (FOIA) covers the President's cabinet agencies, independent agencies, regulatory commissions, and government-owned corporations. Congress is exempt, as are federal courts and state and local governments. Some states and municipalities have laws modeled after the federal FOIA. The federal act includes nine exemptions that agencies may claim as a basis for withholding information. An administrative appeal can be filed that argues for disclosure based on benefits to the public vs. privacy. If a good argument is made, appellate reviewers may waive an exemption.

**freeway**

An expressway with full control of access.

**freeze**

A condition occurring over a widespread area when the surface air temperature remains below freezing for a sufficient time to damage certain agricultural and ornamental crops. A freeze most often occurs as cold air is advected into a region, causing freezing conditions to exist in a deep layer of surface air. Also called *advection frost*.

**freeze calculated landing time (FCLT)**

*Aviation.* A dynamic parameter number of minutes prior to the meter fix calculated time of arrival for each aircraft when the tentative calculated landing time (TCLT) is frozen and becomes an actual calculated landing time (ACLT) i.e., the vertex time of arrival (VTA) is updated and consequently the TCLT is modified as appropriate until freeze calculated landing time (FCLT) minutes prior to meter fix calculated time of arrival, at which time updating is suspended and an ACLT and a

frozen meter fix crossing time (MFT) is assigned.

**freeze protected deluge shower**

A deluge shower that is designed to operate at temperatures which would normally freeze water in the system.

**freeze trap**

A method to collect gases/vapors by cooling the sampled air to a temperature at which the substance(s) of interest condense, and thus collect.

**freezing drizzle**

See *freezing rain*.

**freezing nuclei**

Any particle that has a shape similar to that of an ice crystal and allows rapid freezing of supercooled water. Such particles include certain clay minerals, meteoric dust, and ice crystals themselves.

**freezing rain**

Rain or drizzle that falls in liquid form and then freezes upon striking a cold object or the ground. Both can produce a coating of ice on objects, which is called *glaze*.

**freight**

(1) Property (other than express and passenger baggage) transported by air, rail, truck, seafaring vessel, or other commercial transport means. (2) Any commodity being transported.

**freight agent**

An establishment that arranges the transportation of freight and cargo for a fee. Revenue for freight agents (also known as shipping agents or brokers) represents commissions of fees and not the gross charges for transporting goods.

**freight all kinds (FAK)**

Goods classified FAK are usually charged higher rates than those marked with a specific classification and are frequently in a container which includes various classes of cargo.

**freight and other transportation services**

Forwarding: Includes establishments that provide forwarding, packing, and other services incidental to transportation. Also included are horse-drawn cabs and carriages for hire.

**freight container**

A reusable container having a volume of 64 cubic feet or more, designed and constructed to permit being lifted with its contents intact and intended primarily for containment of packages (in unit form) during transportation.

**freight forwarder**

(1) An individual or company that accepts less-than-truckload (TLT) or less-than-carload (LCL) shipments from shippers and combines them into carload or truckload lots. Designated as a common carrier under the Interstate Commerce Act. (2) A broker that functions as an intermediary between shippers (consignors/consignees) and carriers. Functions performed by a freight forwarder may include receiving small shipments (e.g., less than container load) from consignors, consolidating them into larger lots, contracting with carriers for transport between ports of embarkation and debarkation, conducting documentation transactions, and arranging delivery of shipments to the consignees.

**freight forwarding**

Establishments primarily engaged in undertaking the transportation of goods from shippers to receivers for a charge covering the entire transportation, and in turn making use of the services of various freight carriers in effecting delivery. Establishment pays transportation charges as part of its costs of doing business and assumes responsibility for delivery of the goods. There are no direct relations between shippers and the various freight carriers performing the movement.

**freight revenue**

Revenues from the transportation by air of property other than passenger baggage.

**freight service operating expenses**

The sum of operating expenses directly assignable to freight service and an apportionment of expenses common to both freight and passenger service.

**freight service revenue**

Revenue from the transportation of freight, switching of freight train cars, water transfers of freight, vehicles and livestock, movement of freight trains at a rate per train mile or for a lump sum, storage of freight, demurrage, grain elevators, stockyards, and miscellaneous

services and facilities in connection with the transportation of freight.

**frequency**

The number of cycles, revolutions, or vibrations completed per unit of time. In sound, for example, the frequency describes the rate at which complete cycles of high- and low-pressure peaks are produced. The unit of measurement is cycles per second or hertz (Hz). The normal human ear has a frequency range of 20 to 20,000 Hz at moderate sound pressure levels.

**frequency distribution**

The tabulation of data from the lowest to the highest, or highest to the lowest, along with the number of times each of the values was observed or occurred in the distribution.

**frequency domain**

The expression of a function in terms of frequency.

**frequency function**

See *frequency distribution*.

**frequency masking**

See *simultaneous masking*.

**frequency of exposure**

The number of times per shift, day, year, etc. that an individual is exposed to a harmful substance or physical agent.

**frequency of lift**

The number of times a specified mass is raised and/or lowered within a unit time. (Note: The most common time interval is one minute.)

**frequency of use principle**

A rule that states the most frequently used controls and displays should be placed in optimal locations.

**frequency polygon**

A graphical representation in which the ordinal values corresponding to abscissa values are plotted in a coordinate system and connected by straight lines.

**frequency rate**

Relates the injuries that occur to the hours worked during the period and expresses them in terms of a million man-hour unit.

**frequency response**

That range of frequencies which a system is capable of producing or a sensor is capable of detecting.

**frequency response curve**

A graph of the input frequency spectrum vs. output frequency spectrum for a system.

**frequency spectrum**

A description of the frequency components and associated amplitudes of a time series waveform.

**frequency-time spectrum**

See *compressed spectral array*.

**frequent**

In terms of probability of hazard or mishap occurrence, a hazard or event likely to occur numerous times during the life of an item.

**fresh water**

Water that generally contains less than 1,000 milligrams per liter of dissolved solids.

**friable**

Refers to materials that have a tendency to crumble easily. Most often used to describe the condition that exists when asbestos fibers can potentially be released and become airborne presenting a respiratory hazard.

**friable asbestos-containing material**

Any asbestos-containing material applied on ceilings, walls, structural members, piping, duct work, or any other part of a building which when dry may be crumbled, pulverized, or reduced to powder by hand pressure. The term includes non-friable asbestos-containing material after such previously non-friable material becomes damaged to the extent that when dry it may be crumbled, pulverized, or reduced by hand pressure.

**fricative**

A consonant produced by the steady frictional or turbulent passage of air through a narrowing of a segment within the vocal tract. Also called *spirant*.

**friction**

A force which opposes the motion of a body or tends to hold a stationary body in place. See also *static friction* and *kinetic friction*.

**friction layer**

The atmospheric layer near the surface usually extending up to about 1 km (3300 feet)

where the wind is influenced by friction of the earth's surface and objects on it.

**friction loss**

The pressure loss in a ventilation system due to friction of the moving air on the ductwork.

**Friedman two-way analysis of variance**

A non-parametric statistical test using matched sample rank data to test the null hypothesis.

**fringe benefit**

That compensation to an employee which is not in the form of wages, salary, or bonuses.

**fringe parking**

An area for parking usually located outside the Central Business District (CBD) and most often used by suburban residents who work or shop downtown.

**frit**

The porous section at the end of a glass tube which is employed in a glass flask to breakup an air stream into small bubbles, thereby improving the absorption of air contaminants by the sorbent as air is sampled through it. Often referred to as a glass frit.

**fritted bubbler**

A glass frit. See *frit*.

**frivolous**

Pertaining to a lawsuit with no basis in fact, and which is based on nonsensical legal theory or intended to harass the defendant or grandstand in court.

**frog**

*Rail Operations*. A track component used at the intersection of two running rails to provide support and guidance for the wheels. It allows wheels on each rail to cross the other rail.

**from**

A shipping term under which price quoted applies only at the point of origin, such as ex-mill, ex-rail car, ex-barge, and the seller agrees to place the goods at the disposal of the buyer at the agreed place within a fixed period of time.

**from a little open**

*Transit (slang)*. An expression meaning to depart on a new course from a point 50 yards or less from a defined object.

**from foot of dike**

From the end of the dike where it is attached to the shore.

**from (lower) end of dike**

From the outward or channel end of a dike.

**frons**

See *forehead*.

**front**

The transition zone between two distinct air masses.

**front-end analysis**

The process of determining whether or not a problem exists. Also referred to as *needs assessment* and *discrepancy analysis*.

**frontal**

Pertaining to the anterior portion of the body or of a body part, or the frontal plane.

**frontal arc, minimum**

The minimum surface distance across the forehead to the temporal crests at their points of maximum indentation. Measured with the individual sitting or standing erect and the facial muscles relaxed.

**frontal bone**

The flat bone making up the forehead and superior frontal portion of the skull.

**frontal breadth, maximum**

The horizontal linear distance between the maximum lateral bugles of the brow ridges near the ends of the eyebrow. Also referred to as *forehead breadth*.

**frontal breadth, minimum**

The horizontal linear distance across the forehead from the points of greatest indentation of the temporal crests.

**frontal fog**

See *evaporation fog*.

**frontal lobe**

The most anterior portion of the cerebral hemisphere, extending from the frontal pole to the central sulcus.

**frontal plane**

Any vertical plane at right angle to the midsagittal and horizontal planes which divides the body into anterior and posterior portions. Often referred to as *coronal plane*.

**frontal thunderstorms**

Thunderstorms that form in response to forced convection (forced lifting) along a front. Most go through a cycle similar to those of air mass thunderstorms.

**frontal wave**

A wavelike deformation along a front in the lower levels of the atmosphere. Those that develop into storms are termed *unstable waves*, while those that do not are called *stable waves*.

**frontogenesis**

A meteorological term for the formation, strengthening, or regeneration of a front.

**frontolysis**

A meteorological term for the weakening or dissipation of a front.

**frost**

A covering of ice produced by deposition (sublimation) on exposed surfaces when the air temperature falls below the frost point (the dew point is below freezing). Also called *hoarfrost*.

**frost point**

See *dew point*.

**frostbite**

The destruction of tissue resulting from exposure to extreme cold or contact with extremely cold objects.

**frozen dew**

The transformation of liquid dew into tiny beads of ice when the air temperature drops below freezing.

**frozen section**

A specimen of tissue that has been quick-frozen, cut by microtome, and stained immediately for rapid diagnosis of possible malignant lesions. A specimen processed in this manner is not satisfactory for detailed study of the cells, but it is valuable because it is quick and gives the surgeon immediate information regarding the malignancy of a piece of tissue.

**fructose**

A colorless or white crystalline sugar; also called *levulose* and *fruit sugar*. It is used in solution as a fluid and nutrient replenisher.

**FSG**

See *Federal Sentencing Guidelines*.

**FSS**

See *Flight Service Station*.

**FTA**

See *fault tree analysis*. See also *Federal Transit Administration*.

**FTP**

See *File Transfer Protocol*.

**fuel**

The primary fuel or energy source delivered to a residential site. It may be converted to some other form of energy at the site. Electricity is included as a fuel. Other primary fuels are coal, fuel oil, kerosene, liquefied petroleum gas (LPG), natural gas, wood, and solar.

**fuel cell**

(1) A device for converting chemical energy into electrical energy. (2) A device that produces electrical energy directly from the controlled electrochemical oxidation of the fuel. It does not contain an intermediate heat cycle, as do most other electrical generation techniques.

**fuel code**

A 2-digit numeric code that identifies the type of fuel used. The code identifies regular (gasoline and diesel) fuels, alternative fuels such as natural gas and methanol, and vehicles able to operate on a combination of these fuels (regular and alternative).

**fuel dumping**

*Aviation*. Airborne release of usable fuel. This does not include the dropping of fuel tanks. See also *jettisoning of external stores*.

**fuel economy standard**

The Corporate Average Fuel Economy Standard (CAFE) which went into effect in 1978. It was meant to enhance the national fuel conservation effort by slowing fuel consumption through a miles-per-gallon requirement for motor vehicles.

**fuel fire/explosion**

Accidental combustion of vessel fuel, liquids, including their vapors, or other substance such as wood or coal.

**fuel injection**

A fuel delivery system whereby gasoline is pumped to one or more fuel injectors under high pressure. The fuel injectors are valves

that, at the appropriate times, open to allow fuel to be sprayed or atomized into a throttle bore or into the intake manifold ports. The fuel injectors are usually solenoid-operated valves under the control of the vehicle's on-board computer (thus the term "electronic fuel injection"). The fuel efficiency of fuel injection systems is less temperature-dependent than carburetor systems. Diesel engines always use injectors. See also *carburetor and diesel fuel system*.

**fuel oil**

A liquid petroleum product less volatile than gasoline, used as an energy source. Fuel oil includes distillate fuel oil (No. 1, No. 2, and No. 4), residual fuel oil (No. 5 and No. 6), and kerosene.

**fuel oil, No. 1**

A light distillate fuel oil intended for use in vaporizing pot-type burners. ASTM Specification D 396 specifies for this grade maximum distillation temperature of 400 degrees Fahrenheit at the 10 percent point and 550 degrees Fahrenheit at the 90 percent point, and kinematic viscosity between 1.4 and 2.2 centistoke at 100 degrees Fahrenheit.

**fuel oil, No. 2**

A distillate fuel oil for use in atomizing type burners for domestic heating or for moderate capacity commercial/industrial burner units. ASTM Specification D 396 specifies for this grade distillation temperature at the 90 percent point between 540 and 640 degrees Fahrenheit, and kinematic viscosity between 2.0 and 3.6 centistoke at 100 degrees Fahrenheit.

**fuel oil, No. 4**

A fuel oil for commercial burner installations not equipped for preheating facilities. It is used extensively in industrial plants. This grade is a blend of distillate fuel oil and residual fuel oil stocks that conform to ASTM Specification D 396 or Federal Specification VV-F-815C; its kinematic viscosity is between 5.8 and 26.4 centistoke at 100 degrees Fahrenheit. Also included is No. 4-D, a fuel oil for lower and medium speed diesel engines that conforms to ASTM Specification D 975.

**fuel remaining**

*Aviation.* A phrase used by either pilots or controllers when relating to the fuel remaining on board until actual fuel exhaustion. When transmitting such information in response to either a controller question or pilot-initiated cautionary advisory to air traffic control, pilots will state the appropriate number of minutes the flight can continue with the fuel remaining. All reserve fuel should be included in the time stated, as should an allowance for established fuel gauge system error. *See also minimum fuel.*

**fuel siphoning**

The unintentional release of fuel caused by overflow, puncture, loose cap, etc.

**fuel tank**

A tank other than a cargo tank, used to transport flammable or combustible liquid, or compressed gas for the purpose of supplying fuel for propulsion of the transport vehicle to which it is attached, or for the operation of other equipment on the transport vehicle.

**fuel tank fitting**

Any removable device affixed to an opening in the fuel tank with the exception of the filler cap.

**fueling**

Any stage of the fueling operation; primarily concerned with introduction of explosive or combustible vapors or liquids on board.

**fugitive emissions**

Emissions that are not caught by a capture system. The release of airborne contaminants into the surrounding air other than through a stack, such as the sealing mechanisms of sources including pumps, compressors, flanges, valves, and other type seals. Thus, fugitive emissions result from an equipment leak and are characterized by a diffuse release of materials such as VOCs, hydrocarbons, etc. into the atmosphere. The EPA defines fugitive emissions as those emissions that do not occur as part of the normal operation of the plant.

**fugitive releases**

Under ISO 14000 criteria, emissions to air, water, or land that are not controlled.

**fulcrum**

A fixed point representing the axis about which a lever may operate.

**full berth terms (FBT)**

*Maritime.* Terms under which cost of loading and discharge is included in the steamship rate quoted. Ship owner pays loading and discharge costs.

**full double**

*Maritime.* The maximum tow that can be locked.

**full facepiece respirator**

A respirator which covers the wearer's entire face from the hairline to the chin.

**full hearing**

Embraces not only the right to present evidence, but also a reasonable opportunity to know the claims of the opposing party, and to meet them.

**full radiator**

*See blackbody.*

**full scale**

The maximum measurement value or maximum limit for a given range on an instrument.

**full shift**

The regularly scheduled work period, typically of 8 hours duration.

**full-time employment**

Having a job consisting of about 35 or more hours per week on a regular basis.

**full trailer**

(1) Any motor vehicle other than a pole trailer which is designed to be drawn by another motor vehicle and so constructed that no part of its weight, except for the towing device, rests upon the self-propelled towing unit. A semitrailer equipped with an auxiliary front axle (converter dolly) shall be considered a full trailer. (2) A truck-trailer with front and rear axles. The load weight is distributed over both the front axle(s) and rear axle(s).

**fullmount**

A smaller vehicle mounted completely on the frame of either the first or last vehicle in a saddlemount combination.

**fumble**

An unintentional sensory-motor error.



**fume**

Small solid particles generated following the volatilization of a metal or plastic when their gaseous state condenses quickly upon contact with cooler air. Welding, for example, causes the volatilization of metals into a gas followed by condensation upon contact with cooler air. This creates welding fumes typically on the order of 0.1-1 micrometer in diameter. In popular usage, the word *fume* is often incorrectly used to describe virtually any type of air contaminant.

**fume cupboard**

British term for laboratory fume hood.

**fume fever**

See *metal fume fever*.

**fumigant**

A pesticide that is vaporized to kill pests. Used in buildings and greenhouses.

**function**

(1) *General*. That activity which a product or system is to carry out. (2) *Computing*. A software-supported capability to aid the user in performing a task or operation.

**function area**

*Computing*. A portion of a screen display reserved by a given application for a specific purpose.

**function key**

A key which directs the computer to perform some specific function when pressed. See also *fixed function key*.

**Functional Analysis System Technique (FAST)**

A diagramming process which permits a hierarchy of two-word function definitions derived from a product's consequences and cause.

**functional anatomy**

The study of the body and its component parts, relating them to biomechanical and/or physiological function.

**functional anthropometry**

See *dynamic anthropometry*.

**functional capacity level rating scale**

A seven-point classification for grouping individuals, especially the elderly, according to their ability to perform the activities of daily living.

**functional deafness**

See *psychogenic deafness*.

**functional electrical stimulation**

See *electrical stimulation*.

**functional equivalent**

Term used to describe EPA's decision-making process and its relationship to the environmental review conducted under the National Environmental Policy Act (NEPA). A review is considered functionally equivalent when it addresses the substantive components of a NEPA review.

**functional flow logic diagram**

A technique for determining what operations or processes are necessary to achieve certain objectives from a system.

**functional form analysis**

See *form process chart*.

**functional hazard analysis**

See *fault hazard analysis*.

**functional impact**

A purposeful impact in fulfilling a useful task. See also *beneficial impact*.

**functional impairment**

A reduced ability to perform certain functions. May also be called *functional limitation*.

**functional injury**

A form of trauma not readily detectable by visual examination, but which is indicated by one or more variables measuring a functional limitation.

**functional leg length**

The linear distance from the back at waist level to the heel, measured along the longitudinal axis of the leg. Measured with the individual sitting erect on the edge of a chair and the knee fully extended.

**functional limitation**

See *functional impairment*.

**functional principle**

See *functionality principle*.

**functional reach**

See *thumb-tip reach*.

**functional residual capacity (FRC)**

That volume of air which remains in the lungs after a normal exhalation.

**functional vibration**

An intentional vibration generated to accomplish some end.

**functionality principle**

A rule stating that displays and controls which have related functions should be grouped together.

**fundamental frequency**

In the study of acoustics, the lowest periodic frequency component present in a complex spectrum.

**fundamental motion**

See *therblig*.

**fundus**

The bottom or base of anything; used in anatomic nomenclature as a general term to designate the bottom or base of an organ, or the part of a hollow organ farthest from its mouth.

**fungi**

See *fungus*.

**fungicide**

Pesticides which are used to control, prevent, or destroy fungi.

**fungus**

A general term used to describe the diverse morphological forms of yeast, rust, mildew, and mold. Any non-chlorophyll-bearing thallophyte (that is, any non-chlorophyll-bearing plant of a lower order than mosses and liverworts). *Fungi* (plural) are *heterotrophs* and obtain nourishment by absorption usually from dead or decaying organic matter. Some fungi are beneficial in foods and pharmaceutical development while other can cause pulmonary diseases. Fungi are found in soil, water, and air. Also referred to as *mold*.

**funnel chest**

A deformity of the front of the chest wall, characterized by a funnel-shaped depression with its apex over the lower end of the sternum. Also called *pectus excavatum*.

**funnel cloud**

A rotating cone-like cloud that extends downward from the base of a thunderstorm. When it reaches the surface it is called a *tornado*. If it touches a body of water (lake, pond, ocean, etc.) it is referred to as a *waterspout*.

**furniture van body**

Truck body designed for the transportation of household goods; usually a van of drop-frame construction.

**further clearance time**

*Aviation*. The time a pilot can expect to receive clearance beyond a clearance limit.

**furuncle**

A focal, suppurative inflammation of the skin and subcutaneous tissue, enclosing a central slough or "core." See also *boil*.

**fuscin**

A brown pigment of the retinal epithelium.

**fuse**

(1) *Electrical*. Pertaining to systems over 600 volts (nominal), an overcurrent protective device with a circuit-opening fusible part that is heated and severed by the passage of overcurrent through it. A fuse comprises all the parts that form a unit capable of performing the prescribed functions. It may or may not be the complete device necessary to connect it into an electrical circuit. (2) *Explosives*. A system used to initiate an explosive train.

**fusiform neuron**

See *gamma motor neuron*.

**fusion**

(1) *Nuclear Energy*. A nuclear reaction characterized by the joining together of light nuclei to form heavier nuclei. See also *nuclear fusion*, *binocular fusion*, and *flicker fusion*. (2) *Anatomy*. The combining or blending of distinct bodies into one, such as the fusion into a single image of the separate impressions received by the two eyes, or the surgical process of making a formerly movable structure (joint) immovable.

**fusos**

(1) A spindle-shaped structure. (2) A minute air vesicle in a hair shaft.

**future damages**

Those sums awarded to an injured party for, among other things, residuals or future effects of an injury which have reduced the capability of an individual to function as a whole person, future pain and suffering, loss or impairment of earning capacity, and future medical expenses.

**fuzzy logic**

The use of approximations in reasoning rather than exact, discrete points or information.

**FVC**

See *forced vital capacity*.

**FWPCA**

See *Federal Water Pollution Control Act*.

# G

## g

Abbreviation for gram(s).

### g force

That force experienced on the body due to acceleration(s) from vehicular or other motion. Usually expressed as some multiple or fraction of g.

### g force syndrome

See *acceleration syndrome (an older term)*.

### g-induced loss of consciousness

See *gravity-induced loss of consciousness*.

### g-load

That loading imposed on the body due to gravity of other accelerations.

### g-tolerance

A measure of the ability to withstand positive acceleration(s) without a system failure or blackout.

## GAC

See *granular activated carbon treatment*.

## GADO

See *General Aviation District Office*.

### gadolinium

A chemical element, atomic number 64, atomic weight 157.25, symbol Gd.

## gag

(1) A surgical device for holding the mouth open. (2) To retch, or strive to vomit. (3) Something placed in or around the mouth with the specific intent of preventing speech (usually placed against a person's will).

### gag order

An unruly defendant at trial may be constitutionally bound and gagged to prevent further interruptions in the trial. The term may also refer to an order by the court, in a trial with a great deal of notoriety, directed to attorneys and witnesses, to not discuss the case with reporters (such an order being felt necessary to assure the defendant of a fair trial). Term also refers to order of the court directed to reporters to not report court proceedings, or certain aspects thereof.

## gain

(1) In instrumentation, the ratio of the signal output to input. Gain is frequently referred to as *span*. (2) The constant multiplier in the numerator of a transfer function.

### gain sharing

Any means through which an employee receives benefit in wages from his greater than standard production rates.

### gainful employment

In general, any calling, occupation, profession or work which one may or is able to profitably pursue. Within a disability clause of an insurance policy, the term means ordinary employment of the particular insured, or such other employment, if any, as the insured may fairly be expected to follow.

## gait

The mobility style using an individual's or robotic legs. Many clinical types of gaits have been identified. See also *walk, run, jog, and limp*.

### gait analysis

The study of gait. Usually with the intent to determine mechanisms or quantify disorders.

## gal

Common abbreviation for gallon(s).

### galactic cosmic radiation

That cosmic background radiation, consisting of extremely high energy particles, which comes from outside the solar system.

### galactose

A monosaccharide derived from lactose.

### gallbladder

A small sac-like organ located below the liver. It serves as a storage place for bile. The gallbladder may be subject to such disorders as inflammation and the formation of gallstones. Acute inflammation of the gallbladder causes severe pain and tenderness in the right upper abdomen, accompanied by fever, nausea, prostration, and sometimes jaundice. If the inflammation does not subside quickly, the gallbladder must be removed before it becomes gangrenous and ruptures. Chronic inflammation of the gallbladder may cause habitual indigestion, accompanied by flatulence, and nausea. The indigestion is most evident after heavy meals or meals of fatty foods. There may also be repeated at-

tacks of pain in the right upper abdomen. These may be very brief or may last as long as several hours. Gallstones are often present. The condition may respond to conservative treatment with diet and medications or it may require surgical removal of the gallbladder, especially if there are gallstones.

**galley**

That location on certain ships in which food is prepared for consumption. *See also kitchen.*

**gallon**

A volumetric measure equal to 4 quarts (231 cubic inches) used to measure fuel oil. One barrel equals 42 gallons. *See also barrel.*

**gallstone**

A stone-like mass, called a *calculus*, that forms in the gallbladder. The presence of gallstones is known medically as *cholelithiasis*. Their cause is unknown, although there is evidence of a connection between gallstones and obesity. They are most common in women after pregnancy and in men and women after the age of 35. Gallstones may be present for years without causing trouble. The usual symptoms, however, are vague discomfort and pain in the upper abdomen. There may be indigestion and nausea, especially after eating fatty foods. Either directly or by use of a dye introduced into the gallbladder, x-rays will generally reveal the presence of gallstones. The most common complication of gallstones occurs when one of the stones escapes from the gallbladder and travels along the common bile duct, where it may lodge, blocking the flow of bile to the intestine and causing obstructive jaundice. This condition must be corrected by surgery before liver damage occurs. When a gallstone travels through or obstructs a bile duct it can cause severe biliary colic, probably the most severe pain that can be experienced. The pain is located in the upper right quadrant of the abdomen and radiates through to the scapula.

**galoshes**

A type of waterproof footwear worn external to the shoes.

**galvanic cell**

An electrolytic cell brought about by the difference in electrical potential between two dissimilar metals.

**galvanic current**

Direct current from an electricity source, usually a battery (an outdated term).

**galvanic skin reflex**

*See skin resistance response*

**galvanic skin response**

*See skin resistance response.*

**galvanometer**

An electrical instrument for measuring small electric currents.

**galvo**

*See metal fume fever.*

**game fish**

Species like trout, salmon, or bass, caught for sport. Many of them show more sensitivity to environmental change than "rough" fish.

**gamma**

A unit of magnetic field strength.

**gamma angle**

The angle formed by the intersection of the optical axis and the visual axis (line of sight), usually about 4°.

**gamma efferent**

*See gamma motor neuron.*

**gamma globulin**

A plasma protein developed in the lymphoid tissues and reticuloendothelial system in response to invasion by harmful agents such as bacteria, viruses, and toxins.

**gamma motor neuron**

An A-class motor neuron in the Erlanger-Gasse classification system having a medium conduction velocity which innervates muscle spindle intrafusal fibers and is involved in regulating muscle activity. Also referred to as *gamma efferent* and *fusiform neuron*.

**gamma ray**

Electromagnetic radiation of high energy originating in atomic nuclei and accompanying many nuclear reactions (fission, radioactivity, and neutron capture). Physically, gamma rays are identical to x-rays of high energy; however, x-rays do not originate from atomic nuclei. Gamma rays are true rays of energy in contrast to alpha and beta radiation. The properties are similar to x-rays and other electromagnetic waves. They are the most penetrating waves of radiant nuclear energy

but can be blocked by dense materials such as lead. *See also x-ray.*

**gamma ray irradiation**

A process to reduce pathogens in solid waste by irradiating sludge with gamma rays from certain isotopes.

**gang chart**

A multiple activity process chart used for coordinating work crews.

**ganged controls**

A set of controls which are grouped or stacked on a single axis, usually having a different outside diameter.

**ganglion**

(1) A mass of human or animal tissue-containing nerve cells (neurons). (2) A knot or knot-like mass; used in anatomic nomenclature as a general term to designate a group of nerve cell bodies located outside the central nervous system. (3) A form of cystic tumor occurring on an aponeurosis or tendon, as in the wrist.

**gangrene**

(1) An infection caused by an anaerobic bacteria resulting in the destruction of body tissue. (2) The death and putrefaction of body tissue, caused by the stoppage of circulation to an area, often caused by infection or injury. There are three types of gangrene: moist, dry, and gas gangrene. Moist and dry gangrene result from loss of blood circulation due to various causes; gas gangrene occurs in wounds infected by species of *Clostridium* that break down tissue by gas production and by toxins.

**gangway**

Any ramp-like or stair-like means of access provided to enable personnel to board or leave a vessel, including accommodation ladders, gangplanks, and brows.

**gantry**

A frame structure raised on side supports so as to span over or around something.

**gantry crane**

A crane-hoisting machine mounted on a frame or structure spanning an intervening space. Used primarily in modern container-handling ports.

**Gantt chart**

A two-dimensional graphical representation of the planned activities and the dates/times at which each of those activities should be completed over the duration of a project or other activity.

**Gantt task and bonus plan**

A wage incentive plan in which employees are rewarded with a percentage bonus for higher than normal performance.

**ganzfeld**

A homogeneous, uniformly illuminated, formless visual field.

**GAO**

*See General Accounting Office.*

**gap**

Low point or opening between hills or mountains or in a ridge or mountain range.

**gaps analysis**

An assessment of an organization's current management methods, techniques, and systems to determine its conformance to standards and other requirements, such as ISO 14000.

**garage**

A space large enough to accommodate a car, with a door opening at least six feet wide and seven feet high. "Attached" means it is under part or all of the house or it shares part of a wall in common with the house. Not included are carports, barns, or buildings (not connected to the house) or storage space for golf carts or motorcycles.

**garbage**

*See food waste.*

**garbage and trash collection**

Establishments that are primarily engaged in collecting and transporting garbage, trash, and refuse, within a city, town, or other local area, including adjoining towns and suburban areas.

**garbage in/garbage out (GIGO)**

*Computing.* A phrase indicating that if errors are made in computer input, errors will be present in the output, even if the programming and logic are correct.

**garment**

Any piece of clothing intended for wear over one or more body parts.



**garment design**

The development of a garment, ideally with consideration given to size, style, color, patterns, fabric types, layering, and insulation value.

**gas**

(1) A thin fluid, like air, capable of indefinite expansion but convertible by compression and cooling into a liquid and eventually a solid. Gases may be either elements (such as argon) or compounds (such as carbon dioxide). (2) A state of matter in which the material has very low density and viscosity, and can expand and contract greatly in response to changes in temperature and pressure. A gas easily diffuses into other gases, readily and uniformly distributing itself throughout any container. (3) Except when designated as inert, natural gas, other flammable gas, or gas which is toxic or corrosive. (4) A non-solid, non-liquid combustible energy source that includes natural gas, coke-oven gas, blast-furnace gas, and refinery gas.

**gas amplification**

As applied to gas-ionization radiation-detection instruments, the ratio of the charge collected to the charge produced by the initial ionizing event.

**gas chromatograph-mass spectrometer**

Refers to both an analytical method, as well as the apparatus used in the analysis. The gas chromatograph serves to separate the components of the sample and the mass spectrometer serves to identify them by exposing the eluted components to a beam of electrons which causes ionization to occur. The ions produced are accelerated by an electric impulse, passed through a magnetic field, separated, and identified on their mass. Often referred to simply as *GC-MS* or *GC-Mass Spec*.

**gas chromatography (GC)**

An analytical chemical procedure involving passing a sample through a column of specific make-up to separate the components of the sample, enabling them to elute, or pass out of the column separately and be detected and quantified by one or more detectors such as a flame ionization detector, thermal conductivity detector, electron capture detector, etc.

**gas discharge lamp**

A lamp which produces light at specific wavelengths of the spectrum by electrical excitation of the gas within the lamp. Also called *gaseous discharge lamp*.

**gas distribution company**

Company which obtains the major portion of its gas operating revenues from the operation of a retail gas distribution system, and which operates no transmission system other than incidental connections within its own system or to the system of another company.

**gas exchange**

The diffusion of gases through a membrane or other porous material.

**gas-forming bacteria**

Organisms that ferment lactose in foods or other carbohydrates producing both acid and gas, which may render a food product as unacceptable.

**gas free**

A tank, compartment, or other type containment or area is considered to be gas free when it has been tested, using appropriate instruments, and found to be sufficiently free, at the time of the test, of toxic or explosive gases or vapors for a specified purpose.

**gas frit**

A sintered or fritted glass surface which is designed to break up an air stream into small bubbles in order to increase the contact of the air with a liquid sorbent, thereby improving the absorption of specific gaseous contaminants present in the air. *See also frit*.

**gas guzzler tax**

Originates from the 1978 Energy Tax Act (Public Law 95418). A new car purchaser is required to pay the tax if the car purchased has a combined city/highway fuel economy rating that is below the standard for that year. For model years 1986 and later, the standard is 22.5 mpg.

**gas laser**

A type of laser in which the laser action takes place in a gas medium, such as carbon dioxide.

**gas law**

The thermodynamic law applied to a perfect gas that relates the pressure of the gas to its density and absolute temperature.

**gas mask**

A full-face respirator equipped with an air-purifying cartridge or canister that removes contaminants and renders air breathable to the user. (Not for use in oxygen deficient atmospheres.)

**gas pressure**

The force, generally designated in pounds per square inch (psi), that is exerted by a gas on its surroundings.

**gas sorption**

Devices used to reduce levels of airborne gaseous compounds by passing air through materials that extract gases. The performance of a solid sorbent is dependent on the airflow rate, concentration of the pollutants, presence of other gases or vapors, and other factors.

**gas tension**

The partial pressure of a gas.

**gas test**

An analysis of the air to detect unsafe concentrations of toxic or explosive gases and/or vapors.

**gas/vapor detection instrument**

An assembly of electrical, mechanical, and often chemical components that senses and responds to the presence of a gas/vapor in air mixtures.

**gaseous agent**

A fire extinguishing agent which is in the gaseous state at normal room temperature and pressure. It has low viscosity, can expand or contract with changes in pressure and temperature, and has the ability to diffuse readily and to distribute itself uniformly throughout an enclosure.

**gasification**

Conversion of solid material such as coal into a gas for use as a fuel.

**gasohol**

A blend of finished motor gasoline (leaded or unleaded) and alcohol (generally ethanol but sometimes methanol) limited to 10 percent by volume of alcohol. Gasohol is included in

finished leaded and unleaded motor gasoline. *See also fuel and gasoline.*

**gasoline**

(1) A blend of light hydrocarbon fractions of relatively high antiknock value, with proper volatility, clean burning characteristics, additives to prevent rust and oxidation, and sufficiently high octane rating to prevent knocking. Gasoline typically contains some benzene. (2) A complex mixture of relatively volatile hydrocarbons, with or without small quantities of additives, obtained by blending appropriate refinery streams to form a fuel suitable for use in spark ignition engines. Motor gasoline includes both leaded or unleaded grades of finished motor gasoline, blending components, and gasohol. *See also fuel, gasohol, and kerosene.*

**gasoline aviation/gasoline blending components**

Naphthas that will be used for blending or compounding into finished aviation gasoline (e.g., straight-run gasoline, alkylate, reformate, benzene, toluene, and xylene). Excludes oxygenates (alcohols, ethers), butane, and pentanes plus. Oxygenates are reported as other hydrocarbons, hydrogen, and oxygenates.

**gastric**

Pertaining to the stomach.

**gastritis**

Chronic or acute inflammation of the stomach.

**gastrocolitis**

Inflammation of the stomach and colon.

**gastrocnemius muscle**

The large voluntary skeletal muscle in the posterior lower leg which forms a majority of the calf.

**gastroenteritis**

Inflammation of the mucous membrane of the stomach and intestines that may be caused by various bacteria or viruses. Symptoms may include diarrhea, abdominal cramps, nausea, vomiting, fever, malaise, muscle ache, and fatigue.

**gastrointestinal tract**

The system consisting of the stomach, intestines, and related organs. Commonly referred to as the *GI tract*.

**gastroscope**

An endoscope especially designed for passage into the stomach to permit examination of its interior.

**GATB**

See *general aptitude test battery*.

**gate**

A structure that may be swung, drawn, or lowered to block an entrance or passageway.

**gate dam**

A type of opening in a dam whereby the water passes over the top.

**gate hold procedure**

Procedures at selected airports to hold aircraft at the gate or other ground location whenever departure delays exceed or are anticipated to exceed 16 minutes. The sequence for departure will be maintained in accordance with initial call-up unless modified by flow control restrictions. Pilots should monitor the ground control and clearance delivery frequency for engine start/taxi advisories or new proposed start/taxi time if the delay changes.

**gateway**

In the context of travel activities, gateway refers to a major airport or seaport. Internationally, gateway can also mean the port where customs clearance takes place.

**gathering line**

A pipeline 219.1 mm (8 5/8 inches) or less nominal diameter that transports petroleum from a production facility.

**gauge**

*Marine Navigation.* A scale graduated in tenths of a foot which indicates the water level or river stage.

**gauge pressure**

(1) The pressure with respect to atmospheric pressure, or above atmospheric pressure as indicated on the appropriate pressure gauge. (2) The difference between two absolute pressures, one of which is usually atmospheric pressure

**gauging station**

A structure used to measure the characteristics of a hydrographic feature.

**gauss**

The centimeter-gram-second electromagnetic unit of magnetic flux density, equal to one

Maxwell per square centimeter (an older term). Also referred to as *abtesla*. See also *Maxwell*.

**Gaussian distribution**

Pertaining to or having the appearance of a normal distribution. See *normal distribution*.

**Gaussian noise**

See *white noise*.

**gavage**

Dosing an animal by introducing a test material through a tube into the stomach.

**GAWR**

See *gross axle weight rating*.

**gaze**

To look in one direction for an extended period of time.

**GB**

Gigabyte – approximately one billion bytes.

**GC**

See *gas chromatography*. Also abbreviation for gas chromatograph.

**GCA**

See *ground controlled approach*.

**GC-ECD**

Gas chromatography-electron capture detector.

**GC-FID**

Gas chromatography-flame ionization detector.

**GC-FPD**

Gas chromatography-flame photometric detector.

**GC-MS**

See *gas chromatograph-mass spectrometer*.

**GC-PID**

Gas chromatography-photoionization detector.

**GC-TCD**

Gas chromatography-thermal conductivity detector.

**GCW**

See *gross combination weight*.

**GCWR**

See *gross combination weight rating*.

**GDP**

See *gross domestic product*.

**gear banger**

*Transit (slang).* Driver who grinds gears when shifting.

**gear jammer**

*Transit (slang).* One who constantly clashes the gears.

**gear ratio**

The number of revolutions a driving gear requires to turn a driven gear one revolution. For a pair of gears, the ratio is found by dividing the number of teeth on the driven gear by the number of teeth on the driving gear.

**Geiger counter**

An electrical device that detects the presence of certain types of radioactivity. It consists of a needle-like electrode inside a hollow metallic cylinder filled with gas which, when ionized, sets up a current in an electrical field.

**Geiger-Mueller counter**

A refined version of the Geiger counter that has an amplifying system and is used for detecting and measuring radioactivity.

**GEMI**

*See Global Environmental Management Institute.*

**gender**

(1) Referring to feminine, masculine, or neuter terms in a language. (2) A classification for the male or female of the species. Preferred by some to the term *sex* when referring to the male and female. *See also sex.*

**gene**

(1) A functional unit of heredity that occupies a specific location on a chromosome that is capable of producing itself exactly at each cell division, and can direct the formation of an enzyme or other protein. (2) A length of DNA that directs the synthesis of a protein.

**gene library**

A collection of DNA fragments from cells or organisms. So far, no simple way of sorting the contents of gene libraries has been devised. However, DNA pieces can be moved into bacterial cells where sorting according to gene function becomes feasible.

**General Accounting Office (GAO)**

The GAO of the federal government has the following basic purposes: Assist the Congress, its committees, and its members to

carry out their legislative and oversight responsibilities, consistent with its role as an independent nonpolitical agency in the legislative branch; carry out legal, accounting, auditing, and claims settlement functions with respect to federal government programs and operations as assigned by the Congress; and make recommendations designed to make government operations more efficient and effective. The GAO is under the control and direction of the Comptroller General of the United States and the Deputy Comptroller General of the United States, appointed by the President with the advice and consent of the Senate for a term of 15 years.

**general administration**

*Transit.* All activities associated with the general administration of the transit system, including transit system development, injuries and damages, safety, personnel administration, legal services, insurance, data processing, finance and accounting, purchasing and stores, engineering, real estate management, office management and services, customer services, promotion, market research, and planning.

**General and Administrative (G&A) expenses**

Those expenses of a general corporate nature and expenses incurred in performing activities which contribute to more than a single operating function such as general financial accounting activities, purchasing activities, representation at law, and other general operational administration not directly applicable to a particular function. In the Transportation Industry, for example, passenger service, aircraft and traffic servicing, and promotion and sales expenses are included for certain small air carriers.

**general aptitude test battery (GATB)**

A commonly used test for determining general intelligence, numerical, verbal, and spatial skills, motor coordination, finger and manual dexterity, and clerical perception.

**general average**

A general loss voluntarily incurred to save all interest involved in a common maritime adventure from an impending peril including hull, cargo, and freight at risk.

**general aviation**

(1) Movements of aircraft and helicopters belonging to companies with an air taxi or air work license; an individual, a flying club or a company whose main objective is not to provide revenue passenger transport. (2) All civil flying except that of air carriers. (3) That portion of civil aviation which encompasses all facets of aviation except air carriers. (4) All civil aviation activity except that of air carriers certificated in accordance with Federal Aviation Regulations (FAR) Parts 121, 123, 127, and 135. The types of aircraft used in general aviation activities cover a wide spectrum from corporate multi-engine jet aircraft piloted by professional crews to amateur-built single engine piston acrobatic planes, balloons, and dirigibles.

**general aviation airport**

Any airport which is used or to be used for public purposes, under the control of a public agency, the landing area of which is publicly owned.

**General Aviation Crashworthiness Project**

An effort sponsored by the National Transportation Safety Board which was intended to improve the crashworthiness of small airplanes.

**General Aviation District Office (GADO)**

A Federal Aviation Administration (FAA) field office serving a designated geographical area and staffed with Flight Standards personnel who have the responsibility for serving the aviation industry and the general public on all matters relating to the certification and operation of general aviation aircraft.

**general aviation operations**

Takeoffs and landings of all civil aircraft, except those classified as air carriers or air taxis. *See also* [general aviation](#).

**general cargo**

(1) General cargo consists of those products or commodities such as timber, structural steel, rolled newsprint, concrete forms, agricultural equipment that are not conducive to packaging or unitization. Break-bulk cargo (e.g., packaged products such as lubricants and cereal) are often regarded as a subdivision of general cargo. (2) The tonnes of cargo assessed at the general rate of tolls as defined in the St. Lawrence Seaway Tariff of Tolls.

**general cargo ship**

A ship configured to accommodate general, break-bulk, and containerized cargoes. Cargo handling operations are labor intensive and conducted with either ship's cranes or jib cranes onshore. These ships traditionally have numerous holds located on several decks, have smaller hatches than bulk carriers or containerships, and are usually equipped with a boom or crane positioned at each hatch cover.

**general circulation of the atmosphere**

Large-scale atmospheric motions over the entire earth.

**general contractor**

One who contracts for the construction of an entire building or project, rather than for a portion of the work. The general contractor hires subcontractors (e.g., plumbing, electrical, carpentry, etc.), coordinates all the work, and is responsible for ensuring payment to the subcontractors. Also called *prime contractor*. *See also* [contractor](#).

**general damages**

Damages that are the immediate, direct, and proximate result of the wrongful act that is subject to a complaint.

**General Duty Clause**

Refers to Section 5(a)(1) of the Occupational Safety and Health Act of 1970, which states: "*Each employer shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees, and shall comply with the occupational safety and health standards promulgated under this Act.*" It is often cited by OSHA to cover hazards for which a specific Standard or Regulation does not yet exist.

**general duty clause violation**

Under the Occupational Safety and Health Act, a violation of the general duty clause exists when OSHA can show that the hazard is a recognized hazard, the employer failed to render its workplace free from the recognized hazard, the occurrence of an accident or adverse health effect was reasonably foreseeable, the likely consequence of the incident (accident or adverse effect) was death or a

form of serious physical harm, and there exists feasible means to correct the hazard.

**general environment**

With regard to ionizing radiation, the total terrestrial, atmospheric, and aquatic environment outside sites within which any activity, operation, or process authorized by a general or special license is performed.

**general exhaust ventilation**

A mechanical system for exhausting air from a work area thereby reducing the contaminant concentration by dilution. *See also dilution ventilation system.*

**general export license**

Authorization to export without specific documentary approval.

**general freight carrier**

(1) A carrier which handles a wide variety of commodities. (2) Trucking company engaged in shipping packaged, boxed, and palletized goods that can be transported in standard, enclosed tractor-trailers, generally 40 to 48 feet in length.

**general hearing**

The ability to detect sound and/or discriminate between sounds over a wide range of pitch and loudness (an older term).

**General Industry Standard (GIS)**

*See OSHA General Industry Standard.*

**general law**

A law that affects the community at large. A general law, as distinguished from one that is special or local, is a law that embraces a class of subjects or places, and does not omit any subject or place naturally belonging to such class.

**general license**

As pertains to ionizing radiation, a license issued by the Nuclear Regulatory Commission (NRC), or an Agreement State, for the possession and use of certain radioactive materials, often for small quantities, for which a specific license is not required. Individuals are automatically licensed when they buy or obtain a radioactive material from a vendor who has a license from the NRC to sell products containing small amounts of some radioactive materials.

**general lighting**

The approximately uniform background illumination within a specific area or volume.

**general permit**

A permit applicable to a class or category of dischargers.

**general-use snap switch**

*See switch (2).*

**general-use switch**

*See switch (1).*

**general utility, stage I airport**

This type of airport serves all small airplanes. Precision approach operations are not usually anticipated. This airport is designed for airplanes in Airport Reference Code B-II.

**general utility, stage II airport**

This type of airport serves large airplanes in Aircraft Approach Categories A and B and usually has the capability for precision approach operations. This airport is normally designed for Airport Reference Code B-III.

**general ventilation**

This term is used synonymously with dilution ventilation. General ventilation is used typically for the control of temperature, humidity, or odors.

**general warehousing and storage**

Those establishments primarily engaged in the warehousing and storage of a general line of goods.

**generality**

*See coefficient of determination.*

**generation**

(1) The process of begetting offspring. (2) A successive step or degree in natural descent, or, the average period between any two such successive steps (about thirty years for human beings). (3) Any group of individuals born at or about the same time. (4) The act or process of producing solid waste.

**generator**

A individual, facility, or mobile source that emits or causes or contributes to the emission of pollutants into the air or releases hazardous wastes into the water or soil.

**generic name**

A nonproprietary name, such as the chemical identity of a material or product rather than identification by a registered trade name.



**genetic**

See *gene*.

**genetic defect**

A defect in a living organism as a result of a deficiency in the genes of the original reproductive cells from which the organism was conceived.

**genetic effects**

Inheritable changes, chiefly mutations, produced by the absorption of ionizing radiation, exposure to certain chemicals, ingestion of some medications, and from other causes.

**genetic engineering**

A process of inserting new genetic information into existing cells to modify any organism for the purpose of changing one of its characteristics.

**genetic mutation**

A change in a gene which is reflected in body structure and/or function.

**genetics**

Inheritable changes, chiefly mutations, produced by the absorption of ionizing radiation, exposure to certain chemicals, ingestion of some medications, and from other causes.

**genome**

A total set of chromosomes derived from one parent.

**genotoxic**

(1) Refers to the ability of a chemical to adversely affect the genome of living cells, such that upon duplication, a mutagenic or carcinogenic event is expressed due to the alteration of the genome molecular structure. (2) Chemical or radioactive substance known to cause or suspected of causing damage to the DNA in individual cells, thus causing mutations or cancer.

**genotoxic teratogen**

A substance which includes malformations in a developing embryo via genetic damage (i.e., mutations).

**genotoxin**

A substance that is toxic to genetic material.

**geo map**

*Aviation*. The digitized map markings associated with the Airport Surveillance Radar (ASR-9) System.

**geodesic line**

The shortest line which connects two points on a curved surface.

**Geographical Information System (GIS)**

A system of hardware, software, and data for collecting, storing, analyzing, and disseminating information about areas of the Earth. For Highway Performance Monitoring System (HPMS) purposes, Geographical Information System (GIS) is defined as a highway network (spatial data which graphically represent the geometry of the highways, an electronic map) and its geographically referenced component attributes (HPMS section data, bridge data, and other data including socioeconomic data) that are integrated through GIS technology to perform analyses. From this, GIS can display attributes and analyze results electronically in map form.

**geomedicine**

The branch of medicine dealing with the influence of climatic and environmental conditions on health.

**geometric mean**

The median in a lognormal distribution. Expressed as the  $n$ th root of a product of  $n$  numbers:

$$GM = \sqrt[n]{x_1 \cdot x_2 \cdot \dots \cdot x_n}$$

**geometric progression**

A sequence of values corresponding to the form,  $a, ar^1, ar^2, ar^3, \dots$ .

**geometric series**

An infinite series having the form  $a + ar^1 + ar^2 + ar^3 + \dots$ .

**geometrical access**

See *optical axis*.

**geometry**

The study of size and shape.

**geophysical techniques tests**

Used to locate buried metallic objects, such as Underground Storage Tanks (USTs), and to map groundwater pathways. Testing methodologies include magnetometer, surveys, ground penetrating radar, electrical resistance, and seismic refraction.

**geostationary satellite**

A satellite that orbits the earth at the same rate that the earth rotates and thus remains over a fixed place above the equator.

**geostrophic wind**

The horizontal wind blowing in a straight path, parallel to the isobars or contours, at a constant speed. The geostrophic wind results when the Coriolis force exactly balances the horizontal pressure gradient force.

**geothermal resources**

Under the Federal Geothermal Energy Research, Development, and Demonstration Act of 1974: (1) all products of geothermal processes, embracing indigenous steam, hot water, and brines; (2) steam and other gases, hot water and hot brines, resulting from water, gas, or other fluids artificially introduced into geothermal formations; and (3) any byproduct derived from them.

**GERDDA**

Geothermal Energy Research, Development, and Demonstration Act of 1974 (federal).

**geriatrics**

The study of aging and any diseases associated with aging.

**germ**

A general term for a microorganism.

**germ cell**

The cells of an organism whose function it is to reproduce the kind (i.e., an ovum or spermatozoon). The cells of an organism whose function is reproduction.

**German measles**

A contagious virus disease, most common in children between the ages of 3 and 12 years. Also called *rubella*, or *3-day measles*.

**germanium**

A chemical element, atomic number 32, atomic weight 72.59, symbol Ge.

**germicidal effectiveness**

See *bactericidal effectiveness*.

**germicidal lamp**

See *bactericidal lamp*.

**germicide**

(1) Any compound that kills disease-causing microorganisms. (2) Any substance that kills microbes, or an agent that destroys pathogenic microorganisms.

**gerontology**

The study of aging processes and their associated problems.

**get**

To pick up and acquire control of an object (may include several therbligs).

**GFCI**

See *ground-fault circuit-interrupter*.

**GFF**

Glass fiber filter.

**GFI**

Ground fault interrupter. See *ground-fault circuit interrupter*.

**GHG**

Greenhouse gas.

**GHz**

Gigahertz, 1 E+9 Hz.

**GI tract**

See *gastrointestinal tract*.

**giant nuclei**

See *condensation nuclei*.

**giga-**

(*prefix*)  $10^9$  or 1 billion times the base unit.

**gigabyte (GB)**

Approximately one billion bytes.

**gigawatt (GW)**

One billion watts or one thousand megawatts. See also *electricity, kilowatt, and megawatt*.

**gigawatt electric (GWE)**

One billion watts of electric capacity.

**gigawatt hour (GWH)**

One billion watt-hours.

**GIGO**

See *garbage in/garbage out*.

**Gilbreth basic element**

See *therblig*.

**gimbal**

A device with two mutually perpendicular and intersecting axes of rotation which permits orientation or motion in two directions.

**gingiva**

The mucous membrane and other fibrous tissue covering the upper and lower jaws and bases of the teeth within the mouth.

**gingival septum**

That portion of the gingiva which lies between two teeth.

**gingival sulcus**

The groove between the gingiva and the tooth surface. Also called *gingival crevice*.

**gingivitis**

Inflammation of the gums of the mouth. Bleeding is the primary symptom. Other symptoms include swelling, redness, pain, and difficulty in chewing.

**girth**

The distance around an approximately circular object or cross-section of a structure.

**GIS**

See *Geographical Information System*. See also *OSHA General Industry Standard*.

**glabella**

The most anterior point of the forehead between the brow ridges in the midsagittal plane.

**glabella – inion length**

The horizontal linear distance from glabella to inion in the midsagittal plane. Measured with the individual standing erect and looking straight ahead.

**glabella to back of head**

See *glabella – inion length*.

**glabella to top of head**

The vertical distance from the most anterior point of the forehead between the brow ridges to the level of the top of the head. Measured with the individual standing erect.

**glabella to wall**

The horizontal linear distance from a wall to the most anterior point of the forehead between the brow ridges. Measured with the individual standing erect with his/her back and head against the wall and looking straight ahead.

**glaciated cloud**

A cloud or portion of a cloud where only ice crystals exist.

**glad hands**

*Transit (slang)*. Air hose brake system connections between tractor and trailer.

**gland**

A structure, ranging from a cell to an organ in size, which manufactures, stores, and/or secretes one or more substances for bodily use.

**glare**

The sensation produced by luminance within the visual field that are sufficiently greater than the luminance to which the eyes are adapted. This causes annoyance, discomfort, or loss of visual performance and acuity, a concern especially for individuals using video display terminals for extended periods.

**glare sensitivity**

The ability to see objects despite the presence of glare or strong ambient lighting.

**glare shield**

Any transparent structure which can be used to reduce glare.

**glass blower's cataract**

An opacity of the rear surface of the lens in the eye caused by excessive exposure of the eyes to luminous radiation, primarily visible and infrared. Found in those occupationally exposed to furnaces or other hot devices for extended periods of time.

**glass cockpit**

*Aviation (slang)*. An aircraft cockpit in which the use of multifunctional and computerized displays replaces many of the dedicated gages and instruments.

**glass frit**

See *frit*.

**glaucoma**

An abnormally high pressure in the eyeball. It is caused by an increase in fluid pressure inside the eye, somewhat like an overfilled water balloon. Most cases result from the inability of the eye fluid to drain.

**glaze**

The coating of ice that forms on cold objects that have been exposed to rain or drizzle. See also *freezing rain*.

**GLC**

Ground level concentration.

**glenoid cavity**

The depression in the scapula inferior to acromion which articulates with the head of the humerus to comprise the shoulder joint.

**glide**

A speech sound generally considered as being between a vowel and a consonant, and which is produced by movement or gliding from an articulatory position to an adjacent sound.

**glidepath**

A descent profile determined for vertical guidance during a final approach.

**glider**

A heavier-than-air aircraft, that is supported in flight by the dynamic reaction of the air against its lifting surfaces and whose free flight does not depend principally on an engine.

**glideslope**

Provides vertical guidance for aircraft during approach and landing. The glideslope or "glidepath" is based on the following: a) electronic components emitting signals which provide vertical guidance by reference to airborne instruments during instrument approaches such as Instrument Landing System (ILS)/Microwave Landing System (MLS); or b) visual ground aids, such as Visual Approach Slope Indicator (VASI), which provide vertical guidance for a Visual Flight Rules (VFR) approach or for the visual portion of an instrument approach and landing; or c) used by Air Traffic Control (ATC) to inform an aircraft making a Precision Approach Radar (PAR) approach of its vertical position (elevation) relative to the descent profile. *See also instrument landing system, intercept glideslope altitude, localizer, middle marker, and outer marker.*

**Global Environmental Management Institute (GEMI)**

Established by some major U.S. companies to provide leadership to other companies in developing tools and strategies to help business achieve environmental, health, and safety excellence and economic success.

**Global Positioning System (GPS)**

A space-based radio positioning, navigation, and time transfer system being developed by the Department of Defense. The first satellite in the system was launched from Cape Canaveral Air Station (CCAS) in Florida on February 14, 1989 aboard a Delta-II expendable launch vehicle (ELV). When fully deployed, the system is intended to provide

highly accurate position and velocity information, and precise time, on a continuous global basis, to an unlimited number of properly equipped users. The system will be unaffected by weather, and will provide a worldwide common grid reference system. The Global Positioning System (GPS) concept is predicated upon accurate and continuous knowledge of the spatial position of each satellite in the system with respect to time and distance from a transmitting satellite to the user. The GPS receiver automatically selects appropriate signals from the satellites in view and translates these into a three-dimensional position, velocity, and time. Predictable system accuracy for civil users is projected to be 100 meters horizontally. Performance standards and certification criteria have not yet been established.

**global scale**

*See planetary scale.*

**global warming**

*See greenhouse effect.*

**globe temperature**

A thermal value representing the composite of the dry-bulb temperature, radiation heating, and convection/wind effects. Measured with the thermometer in the center of a 6" sphere which is assumed to be a blackbody radiator or represents the material being tested. *See globe thermometer.*

**globe thermometer**

A dry-bulb thermometer suspended in the center of a sphere that has been painted flat black and is used to measure radiant heat.

**globulin**

Any of a group of proteins found in animal and vegetable tissues that can be precipitated from serum or plasma.

**gloss**

An attribute of a surface which results in a shiny appearance.

**gloss trap**

A cavity or other structure designed to absorb specular reflections from incident light.

**glossal**

Pertaining to the tongue.

**glossitis**

Inflammation of the tongue.

**glossmeter**

A photometer for measuring the gloss of a material in the general direction of specular reflection.

**glossopharyngeal nerve**

A nerve having both motor and sensory components, and generally involved in salivation, muscular control of the pharynx, and taste. May also be called the *ninth cranial nerve*.

**glossy**

Word (adjective) used to describe a polished surface with a mirror-like finish.

**glottis**

The opening between the vocal cords.

**glove**

An article of clothing which has separate appendages for covering the digits and the remainder of the hand, as well as possibly covering the wrist and some portion of the distal forearm. Although there are some social uses that are nothing more than cosmetic, the general intent is to protect tissue from some undesirable or hazardous environment.



*Gloves, as hand protection, are available in a variety of materials to ensure protection against skin exposure to virtually any type of chemical or physical substance*

**glove box laboratory hood**

An enclosed, six-sided hood with arm-length gloves provided at the front or side of the hood for access. An air-lock pass-through port is often provided to insert and remove materials from the hood.

**glove controller**

A lightweight glove-like device which is equipped with transducers and can transmit information about arm, hand, and finger position to a computer for controlling another device.

**glovebag**

A plastic bag which is placed around a pipe or other structure from which the removal of a material, such as asbestos, is to be carried out without its release to the atmosphere.

**GLP**

Good laboratory practice.

**glucose**

A 6-carbon monosaccharide (blood sugar). The most common type of sugar and the primary metabolic energy sources. It forms the basis for the *glycemic index*. All carbohydrates are eventually converted to glucose by the body.

**glutamine**

A nitrogen compound occurring in body tissues and having a part in the production of ammonia by the kidney.

**glutaraldehyde**

A compound used as a disinfectant and as a tissue fixative for light and electron microscopy because of its preservation of fine structural detail and localization of enzyme activity.

**gluteal arc**

That portion of the posterior body surface represented primarily by the curvature of the buttock.

**gluteal arc length**

The surface distance over the buttock from the gluteal furrow to the posterior waist level. Measured with the individual standing erect and the back/hip/leg muscles relaxed except as necessary to maintain posture.

**gluteal furrow**

The crease at the inferior junction of the buttock and superior portion of the posterior thigh.

**gluteal furrow height**

The vertical distance from the floor or other reference surface to the gluteal furrow. Measured with the individual standing erect and the back/hip/leg muscles relaxed except as necessary to maintain posture.

**glycemic index**

A measure of the speed at which a carbohydrate is assimilated. The rapidness of assimilation is determined by the structure of the carbohydrate as well as its fiber content.



**glycerin**

A clear, colorless, syrupy liquid, used as an emollient and as a solvent for drugs; a product, along with fatty acids, of the hydrolysis of ingested fats.

**glycogen**

A polysaccharide (i.e., carbohydrate) molecule, containing glucose and water, which is stored in various body tissues as a quick reserve source of sugar/energy. It is converted to glucose when additional energy is required. Glycogen is the primary way that carbohydrates are stored in skeletal muscle and the liver. Also referred to as *animal starch*.

**glycolysis**

The breakdown of carbohydrates in bodily metabolism.

**GMT**

See *Greenwich Mean Time*.

**GNP**

See *Gross National Product*.

**go ahead**

*Aviation*. Aircraft-to-tower communication protocol meaning *proceed with your message*. The term cannot be used for any other purpose.

**go around**

*Aviation*. Instructions for a pilot to abandon his approach to landing. Additional instructions may follow. Unless otherwise advised by Air Traffic Control (ATC), a Visual Flight Rules (VFR) aircraft or an aircraft conducting visual approach should overfly the runway while climbing to traffic pattern altitude and enter the traffic pattern via the crosswind leg. A pilot on an Instrument Flight Rules (IFR) flight plan making an instrument approach should execute the published missed approach procedure or proceed as instructed by ATC. See also *missed approach*.

**go/no-go display**

*(slang)*. A display which provides information from which the user can make only one of two opposing responses.

**go/no-go reaction**

*(slang)*. One of a set of responses open to an individual in which he/she either responds (go) or withholds (no-go) depending on a stimulus, display, or other input.

**go well over**

*Maritime Navigation*. A term applied in making a crossing meaning to go well over near the shore on the opposite side before turning out to either shape the shore or pass an easy distance off before coming up on the next set of marks.

**goal**

An objective for which some activity is initiated and sustained.

**goal gradient**

The influence of the nearness to reaching a goal on the energy expended toward achieving that goal.

**goal-oriented problem solving**

See *backward chaining*.

**goals, operators, methods, and selection rules (GOMS)**

A method for analyzing and/or modeling the knowledge required for interface use.

**goat 'n' shoat man**

*Transit (slang)*. Driver of a livestock carrier.

**goggle**

A tight-fitting device worn over the eyes to provide splash and/or impact protection.

**going rate curve**

A relationship between the evaluation of jobs and their rates of pay in the labor market.

**goiter**

Enlargement of the thyroid gland, causing a swelling in the front part of the neck.

**gold**

A chemical element, atomic number 79, atomic weight 196.967. symbol Au.

**Gold Book**

Common name for an EPA publication known as the Quality Criteria for Water which was developed as a means of ensuring some level of minimum consistency between the states. The EPA has established minimum criteria for 137 specific pollutants based upon identifiable effects of each pollutant on the public health and welfare, aquatic life, and recreation.

**Golgi tendon organ**

A stretch receptor located primarily near the tendon-muscle junction which measures muscle tension and provides feedback to the nerv-



ous system. Also called *neurotendinous spindle*.

### **GOMS**

See *goals, operators, methods, and selection rules*.

### **gonad**

A primary sex gland, consisting of an ovary in the female or testis in the male.

### **gonial angle**

The point on the lower jaw at which the posterior lower portion of the ramus and lower body of the mandible meet.

### **goniometer**

An apparatus for measuring the limits of flexion (bending) and extension of the joints of the fingers. The goniometer arms are normally aligned with the bones of adjacent body segments, and the angle read from the pivot point.

### **goniophotometer**

An instrument for measuring the quantity of light emitted/reflected in various directions to determine the spatial distribution of light.

### **goniophotometric curve**

A graph or function showing the light emitted/reflected from an object at varying angles of view with a fixed angle of incidence.

### **good condition classification**

No corrective maintenance is needed at time of an inspection. The facility is serving the purpose for which it was constructed.

### **good faith**

An intangible and abstract quality with no technical meaning or statutory definition, and it encompasses, among other things, an honest belief, the absence of malice, and the absence of design to defraud or to seek an unconscionable advantage, and an individual's personal good faith is a concept of his/her own mind and inner spirit and, therefore, may not conclusively be determined by his/her protestations alone.

### **Good Samaritan doctrine**

One who sees a person in imminent and serious peril through negligence of another cannot be charged with contributory negligence, as a matter of law, in risking his/her own life or serious injury in attempting to effect a rescue, provided the attempt is not recklessly or

rashly made. Under this doctrine, negligence of a volunteer rescuer must worsen the position of the person in distress before liability will be imposed. The protection from liability is provided by statute in most states.

### **goodness of fit**

A measure of how well a sample or model approximates a prescribed curve.

### **goose pimples**

Also known as "goose flesh," a skin condition marked by numerous small elevations around the hair follicles caused by the action of the *arrectores pilorum* ("raisers of hair") muscles.

### **gout**

A disease in which uric acid appears in excessive quantities in the blood and may be deposited in the joints and other tissues. During an acute gout attack, there is swelling, inflammation and extreme pain in a joint, frequently the big toe. After several years of attacks, the chronic form of the disease may set in, permanently damaging and deforming joints and destroying cells of the kidney. About 95% of all cases occur in men and the first attack rarely occurs before the age of 30. The causes of gout are not fully understood. It is a disorder of the metabolism of purines. These nitrogenous substances are found in high-protein foods and the net product of their metabolism is uric acid. For unknown reasons, the uric acid, normally expelled in the urine, is retained in the blood in excess amounts. Uric acid crystals are deposited in the joints and in cartilage, where they form lumps called tophi. The uric acid crystals also predispose to the formation of calculi in the kidney (kidney stones) and lead to permanent damage of the kidney cells.

### **governing element**

A work element which requires a longer time than any other element being performed concurrently in a work cycle.

### **government aid cargo**

The tonnes of cargo assessed at the government aid rate of tolls as defined in the St. Lawrence Seaway Tariff of Tolls.

### **government fleet vehicle**

Includes vehicles owned by all federal General Services Administration (GSA), state,

county, city, and metro units of government, including toll road operations.

**government leased vehicle**

A vehicle obtained by an executive agency by contract or other source for a period of 60 continuous days or more.

**government light**

A colloquial term applied to an aid to navigation maintained by the Coast Guard.

**government-owned contractor-operated vehicle**

A vehicle that is owned or leased by the federal government but used by a contractor under a cost reimbursement contract with a federal agency.

**government owned vehicle**

A vehicle that is owned by the federal government.

**government tort**

A wrong perpetrated by the government through an employee or agent or instrumentality under its control which may or may not be actionable depending upon whether there is governmental tort immunity. Tort actions against the federal government are governed by the Federal Tort Claims Act.

**government transportation expenditures**

Those expenditures that are the final actual costs for capital goods and operating services covered by the government transportation program.

**government transportation revenue**

The transportation revenue estimates contained in this report consist of those funds identified as government transportation-related user charges, taxes, or fees in the various data sources. Therefore, general revenue is not included.

**governor**

(1) *General*. One who governs. The elected chief executive of any State in the United States. An official appointed to administer a province, territory, etc. (2) *Automotive Mechanics*. A device which limits the speed of an engine. A governor is also a part on an automatic transmission which signals internal transmission components to shift to a higher gear.

**gpm**

Gallons per minute.

**GPS**

See *Global Positioning System*.

**grab bar**

With regard to ladders, individual handholds placed adjacent to or as an extension above ladders for the purpose of providing access beyond the limits of the ladder.

**grab one**

*Transit (slang)*. To shift into a lower gear as a means of gaining power when driving uphill.

**grab sample**

(1) To collect an air sample for a short period of time to test for the presence of contaminants in a work or other environment. (2) In industrial hygiene application, a type of air sample in which the air is admitted into a bag, vessel, or instrument instantaneously for subsequent analysis.

**graben**

An elongated part of the Earth's crust bounded by faults on its long sides and relatively down-dropped compared to or relative to its surroundings.

**gradability**

The ability of a vehicle to negotiate a given grade at a specified Gross Combination Weight Rating (GCWR) or Gross Vehicle Weight Rating (GVWR). It is the measure of the starting and grade climbing ability of a vehicle, and is expressed in percent grade (1 percent is a rise of 1 foot in a horizontal distance of 100 feet).

**grade**

(1) One level in a series of defined sequential levels according to a set of criteria. (2) The angle of an incline, either up or down from horizontal. (3) To segregate a quantity of some product by quality.

**grade crossings**

An intersection of highway roads, railroad tracks, or dedicated transit rail tracks that run either parallel or across mixed traffic situations with motor vehicles, light rail, commuter rail, heavy rail, trolley bus, or pedestrian traffic. Collisions at grade crossings involving transit vehicles apply only to light rail, commuter rail, heavy rail, or trolley bus. See also

*at grade, highway-rail crossing, and rail-highway grade crossing.*

**Grade D breathing air**

Breathing air which meets the specifications of the Compressed Gas Association (CGA) Commodity Specification for Grade D air. It must have between 19.5 and 23% oxygen content and must contain maximums of 5 mg/m<sup>3</sup> condensed hydrocarbons, 20 ppm carbon monoxide, and 1000 ppm carbon dioxide; and it must have no pronounced odor.

**gradient**

The rate of increase or decrease in magnitude of a variable or response.

**gradient wind**

A wind that blows parallel to curved isobars or contours.

**gradually pull down**

*Marine Navigation.* To swing slowly to a new course on a mark further downstream.

**gradually pull down shape of bend**

*Marine Navigation.* Term used in crossings meaning to keep well out until tow is well down, then alter course to follow the shore shape of the bend.

**gradually pull down shore**

*Marine Navigation.* Term used in crossings meaning, when well over, to gradually swing the vessel's head downstream along the shore.

**Graham's law**

The rate of diffusion of a gas through porous membranes varies inversely with the square root of its density.

**grain**

- (1) A unit of weight equal to 64.8 milligrams.
- (2) The seed of cereal plants.

**grain body**

Low side, open top truck body designed to transport dry fluid commodities.

**grain cargo**

The tonnes of cargo assessed at the Food or Feed Grains rate of tolls as defined in the St. Lawrence Seaway Tariff of Tolls.

**grain loading**

The rate at which particles are emitted from a pollution source. Measurement is made by the number of grains per cubic foot of gas emitted.

**gram**

The basic unit of mass in the metric system. One gram is equal to 15.432 grains.

**gram-atomic weight**

A mass in grams numerically equal to the atomic weight of the element.

**gram mole**

See *gram molecular weight*.

**gram-molecular weight**

Mass in grams numerically equal to the molecular weight of a substance.

**Gram's stain**

A stain for bacteria, used as one means of identifying unknown bacterial organisms.

**Grand Jury**

A tribunal which is part of a criminal procedure to which the prosecutor submits evidence from investigations and which determines whether or not there is probable cause to believe a crime was committed and by whom. If so, next follows an *indictment*.

**grand mal**

A major epileptic seizure attended by the loss of consciousness and convulsive movements, as distinguished from petit mal, a minor seizure.

**grandfather clause**

Provision in a new law or regulation exempting those already in or a part of the existing system which is being regulated.

**Grandfathering Provision**

Under the Clean Water Act, any new source which has been constructed to meet current BACT standards will not be subjected to any additional more stringent standards of performance for as much as 10 years into the future.

**grants**

A federal financial assistance award making payment in cash or in kind for a specified purpose. The federal government is not expected to have substantial involvement with the state or local government or other recipient while the contemplated activity is being performed. The term "grants-in-aid" is commonly restricted to grants to states and local governments.

**granular activated carbon treatment (GAC)**

A filtering system often used in small water systems and individual homes to remove or-

ganics. GAC can be highly effective in removing elevated levels of radon from water.

**granulocytes**

Any cell containing granules, especially a leukocyte containing neutrophil, basophil, or eosinophil granules in its cytoplasm.

**granulocytosis**

An abnormally large number of granulocytes in the blood.

**granuloma**

A tumorlike mass or nodule of vascular tissue due to a chronic inflammation process associated with an infectious disease.

**Granz rays**

X-rays produced at voltages of 5 to 20 kilovoltage peak (KVP).

**graph**

A plot of some function or distribution using a coordinate system.

**graphic**

A pictorial hardcopy or display representing an object or a dataset which involves more than simple straight or curved lines.

**graphic display**

A graphic presented on a CRT, flat panel, or other graphics-capable monitor.

**Graphical User Interface (GUI)**

The use of direct manipulation and icons or other graphical symbols on a display to interact with a computer.

**grapple**

To close a device on the end effector of a robotic or teleoperated arm to gain control of an object.

**grasp**

(1) To position the required number of digits and/or the palm to enable an individual to move, pick up, or hold an object. (2) A therblig; to flex the hand and fingers around an object to gain control of that object.

**grasp reflex**

A grasping motion which occurs on stimulation of the palm or sole of the foot.

**graticule**

See *reticle*.

**graupel**

See *snow pellets*.

**graveyard**

See *burial ground*.

**graveyard shift**

See *third shift*.

**gravimetric method**

An analytical method for determining the concentration of a substance based on determination of the weight of the material collected on a filter, absorbed in a sorbent, or formed in a subsequent analytical procedure.

**gravitational field**

That vector field due to gravity extending through space which would cause the source and any object entering that field to be mutually attracted to each other. One of the basic fields in nature.

**gravitational force**

See *gravity*.

**gravitational physiology**

The study of the effects of different gravity levels on the body's structure and function.

**gravity**

A force which causes objects to attract each other as a function of their masses and the distance between them.

**gravity feed**

The process of using gravitational force to pass materials from one location to another, lower location.

**gravity-induced loss of consciousness (g-LOC)**

That loss of consciousness due to high positive g-force maneuvers with the resulting reduction in cranial blood supply in high performance aircraft. See also *grayout* and *blackout*.

**gray**

(1) *General*. An achromatic color between total white and total black. (2) The unit of absorbed radiation dose. One *gray* is equal to one joule per kilogram.

**gray scale**

A series of achromatic shades with varying proportions of white and black, to give the full range between total whiteness and total blackness.

**gray water**

The term given to domestic wastewater composed of washwater from sinks, kitchen sinks, bathroom sinks and tubs, and laundry tubs.

**graying of vision**

See *grayout*.

**grayout**

A condition in which the visual field begins to narrow and decrease in brightness. Also referred to as *graying of vision*. See also *gravity-induced loss of consciousness* and *blackout*.

**grazing permit and lease**

Under the Federal Land Policy and Management Act of 1976: Any document authorizing use of public lands or lands in National Forests in the eleven contiguous western states for the purpose of grazing domestic livestock.

**great bodily injury**

Bodily injury which involves a substantial risk of death, serious permanent disfigurement, or protracted loss or impairment of function of any part of an organ of the body.

**great care**

*Law.* Great care is such as persons of ordinary prudence usually exercise about affairs of their own which are of great importance; or it is that degree of care usually bestowed upon the matter in hand by the most competent, prudent, and careful persons having to do with the particular subject. Highest degree of care and utmost care have substantially the same meaning. "Highest degree of care" only requires the care and skill exacted of persons engaged in the same or similar business. It means the highest degree required by law where human safety is at stake, and the highest degree known to the usage and practice of very careful, skillful, and diligent persons engaged in the same business by similar means or agencies.

**Great Lakes-St. Lawrence Seaway Freight Transportation**

Establishments primarily engaged in the transportation of freight on the Great Lakes and St. Lawrence Seaway, either between U.S. ports or between U.S. and Canadian ports.

**Great River Environmental Action Team**

A multi-agency planning group organized to develop a resource management plan for the Upper Mississippi River. Operates under the auspices of the Upper Mississippi River Basin Commission.

**greater hazard defense**

A well-established Occupational Safety and Health Review Commission (OSHRC) doctrine that, on some occasions, allows employers to escape sanctions for violations of otherwise applicable safety regulations because the act of abating the violation would itself pose an even greater threat to the safety and health of their employees.

**greater multiangular bone**

See *trapezium*.

**greater trochanter**

A large lateral projection of the proximal femur.

**green**

A primary color, corresponding to that hue apparent to the normal eye when stimulated only with electromagnetic radiation approximately between 495 to 575 nm wavelength.

**green blindness**

See *deuteranopia*.

**green development**

An emerging practice in real estate development which emphasizes research and incorporation of environmentally and economically sound measures into real estate projects.

**green flash**

A small, green color that occasionally appears on the upper part of the sun as it rises or sets.

**Greenburg-Smith impinger**

A relatively large impinger that has been employed for the collection of airborne dust samples. Requires a sample rate of 1 cubic foot per minute.

**greenhouse effect**

The warming of the earth's atmosphere caused by a build-up of carbon dioxide or other trace gases; it is believed by many scientists that this build-up allows light from the sun's rays to heat the earth but prevents a counterbalancing loss of heat. Also known as *global warming* or, simply *atmospheric effect*.

**greening**

Incorporating environmental performance and sustainability into overall corporate strategies and environments.

**Greenwich Mean Time (GMT)**

A world time standard; the mean solar time at the Greenwich (England) Meridian.



**grid**

A flat section of a region which is subdivided into smaller, usually square, sections.

**grievance**

Any dissatisfaction with working conditions or pay which is expressed by one or more employees to management. Such employees are typically, but not necessarily, represented by a collective bargaining agreement.

**grievance committee**

A group of workers, usually in a union shop, who have been chosen by their fellow workers (of the same union) to represent employees to management during grievance proceedings.

**grievance procedures**

Any sequence of steps which should be followed in pursuing an employee's grievance through an organization in an attempt to obtain resolution.

**grille**

Component of a ventilation system through which air is returned to the system from the space to which it was supplied.

**grind**

A process using an abrasive disk rotating at high speed.

**grinder pump**

A mechanical device which shreds solids and raises the fluid to a higher elevation through pressure sewers.

**grinder's asthma**

Asthmatic symptoms related to the inhalation of fine particles generated in the grinding of metals. Also called *grinder's rot*.

**grip**

(1) To hold firmly; *see also* [grasp](#). (2) That portion of a tool or other device which is normally held by the operator for carrying or operating the tool. The grip design typically attempts to conform to the shape of the hand and fingers.

**grip diameter, inside**

The diameter of the widest level of a cone which an individual can grasp with his/her thumb and middle finger (digit III) touching. Measured at the level of the thumb crotch.

**grip diameter, outside**

The linear distance between the joint of the 1st and 2nd phalanges of the thumb and the metacarpal-phalangeal joint of the middle finger (digit III). Measured with the hand held around a cone at the widest level at which the thumb and middle finger (digit III) can still touch.

**grip strength**

The amount of force which may be applied when grasping or squeezing an object under specified conditions.

**gristle**

*See cartilage.*

**grit**

Coarse nuisance dust particles that are larger than 75 microns in diameter.

**groin**

That region between the thighs at the apex of the pubic crotch.

**grooving**

The practice of designing a tool with grooves to accommodate the user's fingers.

**gross adjustment**

*See primary positioning movement.*

**gross alpha particle activity**

The total activity, commonly measured in picocuries, due to emission of alpha particles. Generally used as a screening measurement for naturally occurring radionuclides.

**gross anatomy**

That portion of anatomy which involves the bodily features apparent to the naked eye.

**gross axle weight rating (GAWR)**

Value specified by the vehicle manufacturer as the load carrying capacity of a single axle system, as measured at the tire-to-ground interfaces.

**gross beta particle activity**

The total activity, commonly measured in picocuries, due to emission of beta particles. Used as a screening measurement for human-made radionuclides.

**gross body coordination**

The ability to integrate motion of the body segments while the entire body is in motion.



**gross body equilibrium**

A measure of the ability to retain or acquire one's balance, regardless of bodily position or motion.

**gross combination weight (GCW)**

The maximum allowable fully laden weight of a tractor and its trailer(s).

**gross combination weight rating (GCWR)**

The value specified by the manufacturer as the loaded weight of a combination (articulated) vehicle. In the absence of a value specified by the manufacturer, GCWR will be determined by adding the Gross Vehicle Weight Rating (GVWR) of the power unit and the total weight of the towed unit and any load thereon.

**Gross Domestic Product (GDP)**

The total value of goods and services produced by labor and property located in the United States. As long as the labor and property are located in the United States, the supplier (that is, the workers and, for property, the owners) may be either U.S. residents or residents of foreign countries.

**gross head**

A dam's maximum allowed vertical distance between the upstream's surface water (headwater) forebay elevation and the downstream's surface water (tailwater) elevation at the tail-race for reaction wheel dams or the elevation of the jet at impulse wheel dams during specified operation and water conditions.

**gross horsepower**

The power of a basis engine at a specified revolution per mile without alternator, water pumps, fan, etc. Gross horsepower is the figure commonly given as the horsepower rating of an engine.

**gross metabolic cost**

The total amount of energy expended to perform some specific activity. *See also net metabolic cost.*

**Gross National Product (GNP)**

A measure of monetary value of the goods and services becoming available to the nation from economic activity. Total value at market prices of all goods and services produced by the nation's economy. Calculated quarterly by the Department of Commerce, the Gross Na-

tional Product is the broadest available measure of the level of economic activity.

**gross registered tonnage (GRT)**

(1) The capacity of a vessel in cubic feet of the spaces within the hull and of the enclosed spaces above the main deck available for cargo, stores, and crew, divided by 100. (2) The gross registered tonnage of a vessel according to the country of registry.

**gross ton mile**

The number of tons behind the locomotive (cars and contents, company service equipment, and cabooses) times the distance moved in road freight trains.

**gross tonnage**

The gross tonnage of a vessel is the internal cubic capacity of all spaces in and on the vessel which is permanently enclosed, with the exception of certain permissible exemptions. It is expressed in tons of 100 cubic feet.

**gross vehicle weight (GVW)**

(1) The maximum allowable weight in pounds or tons that a truck is designed to carry. (2) The weight of the empty vehicle plus the maximum anticipated load weight.

**gross vehicle weight rating (GVWR)**

(1) The maximum loaded weight in pounds of a single vehicle. Vehicle manufacturers specify the maximum gross vehicle weight rating (GVWR) on the vehicle certification label. (2) The maximum rated capacity of a vehicle, including the weight of the base vehicle, all added equipment, driver and passengers, and all cargo loaded into or on the vehicle. Actual weight may be less than or greater than GVWR.

**gross weight**

(1) Entire weight of goods, packing, and container ready for shipment. (2) The weight of a packaging plus the weight of its contents. *See also net weight.*

**ground**

(1) *General.* The surroundings of a figure or object which are perceived as behind or not belonging directly to the figure or object of interest. Also, the surface of the earth. (2) *Electricity.* A conducting connection, whether intentional or accidental, between an electrical circuit or equipment and the earth, or to some conducting body that serves in place of the

earth. *See also* **electrical ground**. (3) To restrict from certain activities, especially flying.

**ground blizzard**

*See* **blizzard**.

**ground controlled approach (GCA)**

*Aviation*. A radar approach system operated from the ground by air traffic control personnel transmitting instructions to the pilot by radio. The approach may be conducted with airport surveillance radar (ASR) only or with both surveillance and precision approach radar (PAR). Usage of the term "GCA" by pilots is discouraged except when referring to a Ground Controlled Approach (GCA) facility. Pilots should specifically request a "PAR" approach when a precision radar approach is desired or request an "ASR" or "surveillance" approach when a non-precision radar approach is desired. *See also* **airport surveillance radar** and **precision approach radar**.

**ground cover**

Plants grown to keep soil from eroding.

**ground current**

Any current passing to or through the earth from electrical equipment.

**ground delay**

The amount of delay attributed to Air Traffic Control (ATC), encountered prior to departure, usually associated with a Controlled Departure Time (CDT) program.

**ground-fault circuit-interrupter (GFCI)**

A device whose function is to interrupt the electric circuit to the load when a fault current to ground exceeds some predetermined value that is less than that required to operate the overcurrent protective device of the supply circuit.

**ground-fault interrupter (GFI)**

*See* **ground-fault circuit interrupter**.

**ground fog**

*See* **radiation fog**.

**ground potential**

*See* **electrical ground**.

**ground property, equipment and other**

The total cost of ground property and equipment and land.

**ground speed**

The speed of an aircraft relative to the surface of the earth.

**ground stop**

*Aviation*. Normally, the last initiative to be utilized; this method mandates that the terminal facility will not allow any departures to enter the Air Route Traffic Control Center (ARTCC) airspace until further notified.

**ground state**

The lowest energy level of an atom.

**ground surface**

The land surface of the earth, both exposed and underwater.

**ground visibility**

Prevailing horizontal visibility near the earth's surface as reported by the United States National Weather Service or an accredited observer.

**grounded conductor**

A system or circuit conductor that is intentionally grounded.

**grounded, effectively**

*See* **effectively grounded**.

**grounding**

(1) *Electronics*. The practice of eliminating the difference in voltage potential between an object and ground. Procedure involves connecting the object to an effective ground (metal to metal) by an appropriate wire. (2) *Maritime Navigation*. Running aground of a vessel, striking or pounding on rocks, reefs, or shoals; stranding.

**grounding conductor**

A conductor used to connect equipment or the grounded circuit of a wiring system to a grounding electrode or electrodes.

**grounding conductor, equipment**

The conductor used to connect the non-current-carrying parts of equipment, raceways, and other enclosures to the system grounded conductor and/or the grounding electrode conductor at the service equipment or at the source of a separately derived system. *See also* **grounding electrode conductor**.

**grounding electrode conductor**

The conductor used to connect the grounding electrode to the equipment grounding conductor and/or to the grounded conductor of the circuit at the service equipment or at the source of a separately derived system.

**groundwater**

The supply of fresh water found beneath the Earth's surface, usually in aquifers, which is often used for supplying wells and springs. Because groundwater is a major source of drinking water, there is a growing concern over areas where leaching agricultural or industrial pollutants or substances from leaking underground storage tanks are contaminating groundwater.

**group**

Two or more persons having some common relationship or interest.

**group II railroad**

Railroads, excluding Class I, with an annual accumulation of over 400,000 employee hours worked.

**group dynamics**

The interactions between the members of a group or their functioning as a unit.

**group incentive plan**

An incentive plan under which a number of workers are collectively rewarded based on the results of the entire group's behavior.

**group technology**

A concept which holds that the similarities of part geometric shapes or processes can be grouped to reduce manufacturing costs.

**growing degree-day**

A form of the degree-day used as a guide for crop planting and for estimating crop maturity dates.

**growth**

(1) An increase in the number of cells and/or cell size. (2) An expansion in consciousness or value.

**growth curve**

A graphic representation of the pattern of increase in some measure.

**growth rate**

A measure of the rapidity in some aspect of individual or entity growth.

**GRT**

See *gross registered tonnage*.

**guard**

(1) A person whose primary function is to restrict entry to a certain facility and observe that facility for hazards or violations. (2) A physical device to prevent undesired contact

with a source of energy between people, equipment, materials, and the environment. (3) Any structure designed to restrict or limit entry into some hazardous region of a piece of equipment for preventing injuries.

**guard rail**

*Transit*. A strong fence or barrier to prevent vehicles from leaving the roadway, or for people's safety. See also *guardrail*.

**guard wall**

The river wall of a lock which prevents boats from being drawn into the dam.

**guarded**

Covered, shielded, fenced, enclosed, or otherwise protected by means of suitable covers, casings, barriers, rails, screens, mats, or platforms to remove the likelihood of approach to a point of danger or contact by persons or objects.

**guardrail**

A rail secured to uprights and erected along the exposed sides and ends of platforms to protect persons from otherwise exposed openings through which they may fall.

**GUI**

See *Graphical User Interface*.

**guide wall**

The extension of the inner lock wall on the upper and lower side of the lock chamber to assist navigators in guiding vessels or tows into the lock chamber. It is usually 600 feet in length, although some are now 1,200 feet long.

**guideline**

A recommended practice or other non-binding suggestion issued by an agency, without the force of law. Contrasted to a *regulation*.

**guideway**

In transit systems, a track or other riding surface (including supporting structure) that supports and physically guides transit vehicles specifically designed to travel exclusively on it.

**Gulf Intracoastal Waterway**

The system of that name extending from St. Marks, Florida to Brownsville and Harlingen, Texas and including the Pearl River, Tombigbee River, Apalachicola River, Flint River,

and such other navigable tributaries to which barge operations extend.

**Gulf of Mexico and its inlets**

The waters from the mean high water mark of the coast of the Gulf of Mexico and its inlets open to the sea (excluding rivers, tidal marshes, lakes, and canals) seaward to include the territorial sea and Outer Continental Shelf (OCS) to a depth of 15 feet, as measured from the mean low water.

**Gulf Stream**

A warm, swift, narrow ocean current flowing along the east coast of the United States.

**gum**

See *gingiva*.

**gum ball machine**

*Transit (slang)*. The rotating warning light on top of an emergency vehicle.

**gust front**

A boundary that separates a cold downdraft of a thunderstorm from warm, humid surface air. On the surface its passage resembles that of a cold front.

**gustation**

The sense of taste.

**gut**

The intestines.

**GVW**

See *gross vehicle weight*.

**GVWR**

See *gross vehicle weight rating*.

**GW**

See *gigawatt*.

**GWE**

See *gigawatt electric*.

**GWH**

See *gigawatt hour*.

**gypsy**

*Transit (slang)*. (1) An independent truck operator who drives his own truck and secures freight wherever he can. (2) One who trip-leases to authorized carriers.

**gyre**

A large, circular, surface ocean current pattern.

**gyrodyne**

A rotorcraft whose rotors are normally engine driven for takeoff, hovering, and landing, and for forward flight through part of its speed range, and whose means of propulsion, consisting usually of conventional propellers, is independent of the rotor system.

**gyroplane**

A rotorcraft whose rotors are not engine driven, except for initial starting, but are made to rotate by action of the air when the rotorcraft is moving; and whose means of propulsion, consisting usually of conventional propellers, is independent of the rotor system. See also *helicopter*.

# H

## **H point**

The mechanically hinged hip point of a manikin which simulates the actual pivot center of the human torso and thigh, described in Society of Automotive Engineers (SAE) Recommended Practice J826, "Manikins for Use in Defining Vehicle Seating Accommodations," November 1962.

## **habeas corpus**

(*Latin*). Meaning "you have the body."

## **Haber's Rule**

States that a toxic effect is dependent upon the product of exposure time and the contaminant concentration. Thus, exposure at a higher concentration for a short period would be equivalent to exposure at a lower concentration for a longer period in direct proportion to the product of exposure concentration and time. This reportedly, however, holds only for short exposure periods. Also referred to as *Haber's Law*.

## **habilitate**

Bring to an initial state of fitness or capability, as in overcoming a congenital handicap. See also *rehabilitate*.

## **habit**

An acquired, well-practiced behavior pattern which is carried out with minimal or no conscious direction.

## **habitability**

A measure of the interaction quality of an individual or group with their physical, social, and psychological environment to produce certain working and living conditions.

## **habitable volume**

That volume which is suitable for living, containing breathable air and necessary or reasonable accommodations.

## **habitat**

The place where population (e.g., human, animal, plant, microorganism) lives and its surroundings, both living and non-living.

## **habitual criminal**

A legal category created by statute in many states by which more severe penalties can be imposed on offenders who have multiple fel-

ony convictions. The criminal history of a defendant is an important factor in imposing sentence under federal sentencing guidelines.

## **habituation**

A decline in response or conscious sensitivity to repeated or maintained exposure to one or more environmental stimuli.

## **habituation error**

The tendency to keep making the same response, even if the stimulus or conditions change.

## **haboob**

A dust or sandstorm that forms as cold downdrafts from a thunderstorm turbulently lift dust and sand into the air.

## **habutai**

A soft, lightweight, plain weave silk.

## **hacking**

A massaging technique in which the medial edge of the open hand is brought repeatedly against the body surface.

## **Hadley cell**

A thermal circulation pattern first proposed by George Hadley to explain the movement of the trade winds. It consists of rising air near the equator and sinking air near 30° latitude.

## **hafnium**

A chemical element, atomic number 72, atomic weight 178.49, symbol Hf.

## **hahnium**

A chemical element, atomic number 105, atomic weight 260, symbol Ha.

## **hailstones**

Transparent or partially opaque particles of ice that range in size from that of a pea to that of golf balls. Some may even reach larger proportions, such as that of a softball, but such development is very uncommon.

## **hair**

(1) The collective hair shafts growing in various portions of the body, such as the scalp, face, or pubic region. (2) A single keratinized shaft growing from a hair root within the skin. (3) A threadlike structure, especially the specialized epidermal structure developing from a papilla sunk in the corium, produced only by mammals and characteristic of that group of animals.

**hair esthesiometer**

A device developed by von Frey to determine skin touch sensitivity, consisting of a filament attached to some type of holder. *See also von Frey filament.*

**hair follicle**

That structure surrounding the root of a hair in the skin.

**hair hygrometer**

*See hygrometer.*

**hairball**

A concentration of hair sometimes found in the stomach or intestines of man or other animals.

**HAL**

*See height above landing.*

**half-life**

(1) *Biological.* The time required for the body to eliminate, by natural biological means, half of the material taken into it. (2) *Effective.* The time in which the quantity of a radioactive isotope in the body will decrease to half as a result of *both* radioactive decay and biological elimination. (3) *Radioactive.* The time for the activity of a given radioactive isotope to decrease to half of its initial value, due to radioactive decay. The half-life is a characteristic property of each radioactive isotope and is independent of its amount or condition.

**half-mask respirator**

Respirator which covers half the face, from the bridge of the nose to below the chin.

**half-thickness**

*See half-value layer.*

**half-value layer (HVL)**

The thickness of a specified material which, when introduced into the path of a given beam of ionizing radiation, reduces the exposure rate by one-half. Also referred to as the *half-thickness*.

**halfway-to-hip circumference**

The surface distance around the torso at a level midway between the waist height and the trochanteric height levels. Measured with minimal tissue compression.

**halide**

A compound of a halogen with an element or radical.

**halide meter**

An instrument used for the direct measurement of halogenated hydrocarbons.

**halitosis**

A condition in which one's breath is offensive to others.

**hallucination**

An apparently real sensory perception (auditory or visual) without any real external stimuli to cause it; commonly experienced by psychotics.

**hallucinogen**

A psychedelic agent; a compound that produces changes in perception, thought, or mood without causing major disturbances in the nervous system (autonomic). An example is LSD.

**halo**

A ring or arc that appears to encircle the sun or moon when seen through an ice crystal cloud or a sky filled with falling ice crystals. Halos are produced by refraction of light.

**halo effect**

A tendency for an evaluator to be overly influenced by an individual's ratings on one trait or due to some past outstanding achievement.

**halogen**

Any of a group of five chemically related nonmetallic elements that includes bromine, fluorine, chlorine, iodine, and astatine.

**halogenation**

The process whereby halogens are used for disinfecting purposes.

**Halon 1211**

A colorless, faintly sweet smelling, electrically nonconductive liquefied gas, chemical formula  $\text{CBrClF}_2$ , which is a medium for extinguishing fires by inhibiting the chemical chain reaction of fuel and oxygen. It is also known as bromochlorodifluoromethane.

**Halon 1301**

A colorless, odorless, electrically nonconductive gas, chemical formula  $\text{CBrF}_3$ , which is a medium for extinguishing fires by inhibiting the chemical chain reaction of fuel and oxygen. It is also known as bromotrifluoromethane.



**halons**

Bromine-containing compounds, normally used in firefighting methodologies, with long atmospheric lifetimes whose breakdown in the stratosphere is thought to cause ozone depletion.

**halothane**

A colorless, mobile, non-flammable, heavy liquid used by inhalation to produce anesthesia.

**hamarthritis**

Arthritis of all the joints.

**hamate bone**

One of the distal group of bones on the wrist.

**Hamman's disease**

Spontaneous interstitial emphysema of the lungs.

**Hamman-Rich syndrome**

Diffuse interstitial pulmonary fibrosis.

**hammer provision**

Common term for the automatic promulgation of required standards by Congress, usually invoked when a regulatory agency such as the EPA fails to promulgate the required standard by an established deadline.

**hammermill**

A high-speed machine that hammers and cutters use to crush, grind, chip, or shred solid wastes.

**hamstring**

The tendon for the hamstring muscles.

**hamstring muscles**

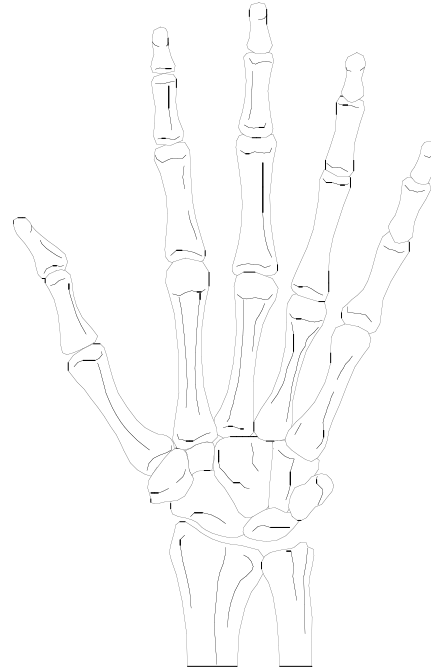
A group of muscles in the posterior thigh, consisting of the biceps femoris, semitendinosus, and semimembranosus muscles. Sometimes simply referred to as *hamstrings*.

**hand**

(1) *Measurement*. A measure of length equal to four inches, usually used in measuring the height of horses. (2) *Anatomy*. The metacarpal and phalangeal bones and other associated tissues normally existing distal to the wrist. See also *metacarpal bone*.

**hand-arm**

Involving both the hand and the arm, generally pertaining to sensory or other external influences on both the hand and the arm. See also *arm-hand*.



*Human hand/wrist showing phalangeal and metacarpal bones*

**hand breadth, metacarpal**

The maximum linear width of the hand across the distal ends of the metacarpal bones. Measured with the fingers extended and adducted.

**hand breadth, thumb**

The maximum width of the hand at the level of the distal end of the first metacarpale of the thumb. Measured with the fingers extended and adducted, and the thumb adducted to the side of the plan.

**hand circumference**

The surface distance around digits II – V at the metacarpal-phalangeal level. Measured with the hand flat and the fingers extended.

**hand circumference, overthumb**

The surface distance around the hand, in a plane at right angles to the long axis of the hand, passing over the metacarpals and the metacarpal-phalangeal joint of the thumb; also hand circumference including thumb. Measured with the hand flat, the fingers extended, and the thumb aligned with the index finger.

**hand control**

Any control on a panel or other structure which is used for controlling some process and is normally designed for positioning by the hand.

**hand feed**

That portion of a machine at which the materials or operating portion are fed for processing at a pace determined by the worker.

**hand-held drench shower**

A flexible hose connected to a water supply and used to irrigate and flush eyes, face, and body areas in the event of contact with a hazardous material that is corrosive, irritating, absorbed through the skin, etc.

**hand hole**

A slot in the side or end of a container used for carrying items.

**hand length**

The linear distance from the plane where the base of the hand/thumb joins the wrist in the fleshy tip of the middle finger (digit III) parallel to the longitudinal axis of the hand. Measured with the fingers extended and adducted, the wrist rotated/supinated into the anatomical position.

**hand-operated switch**

A non-interlocked switch which can only be operated manually.

**hand protection**

Gloves, or other type hand protection which will prevent the harmful exposure of the wearer to hazardous materials.

**hand rail**

A single bar or pipe supported on brackets from a wall or partition, as on a stairway or ramp, to furnish persons with a handhold in case of tripping.

**hand steadiness**

A measure of the ability to sustain a fixed position of the hand and/or finger with minimal tremor. Also referred to as *manual steadiness*. See also *arm-hand steadiness*.

**hand thickness, metacarpale III**

The thickness of the metacarpo-phalangeal joint of the middle finger (digit III). Measured with the hand flat, fingers extended and adducted.

**hand tool**

Any small tool capable of being held and used easily by one or both hands for manufacturing, servicing, or other activities.

**handcontroller**

A small device, usually grasped by or fitting the hand, which responds to axial and/or rotational movements for allowing an operator to control a larger/stronger/ remote system.

**handedness**

A preference for using one arm-hand or the other, or a combination of the two.

**handhold**

A structure consisting of a segment which normally is an elliptical- or rod-shaped cross-section and of suitable outside perimeter and length to permit a hand to grasp it for carrying, for assistance in remaining in a desired position, or for mobility.

**handicap**

(1) A compensating factor which attempts to equalize performance levels on one or more aspects in some activity. (2) A physical or mental condition which prevents an individual from functioning at a normal performance level, especially referring to those functions such as activities of daily living.

**handle**

(1) A structure designed for gripping an object. (2) To move an object or material from one location to another, via a suitable combination of motions.

**handling**

Physically moving cargo between point-of-rest and any place on the terminal facility, other than the end of ship's tackle.

**handling aid**

See *job aid*.

**handling structures**

Structures such as beams, plates, channels, angles, and rods assembled with bolts, pins, and/or welds. Includes lifting, supporting, and manipulating equipment such as lifting beams, support stands, spin tables, rotating devices, and fixed and portable launch support frames.

**handling time**

The period of time required to move parts or materials to or from a work area or operation.

**handoff**

*Aviation*. A Controller action taken to transfer the radar identification of an aircraft from one Controller to another if the aircraft will

enter the receiving Controller's airspace and radio communications with the aircraft will be transferred.

**handwear**

Any form of clothing worn over the hand.

**handwheel**

A large control device intended for rotation when a mechanism requires a greater amount of torque than can be applied by a knob.

**handy line**

A small line used to throw between separated barges or boat and shore, (i.e., heaving line).

**hanging wall**

Of the two sides of a fault, the side above the fault plane. It is called the hanging wall because where faults have been "filled in" with mineral deposits and then mined, this is the side on which miners can hang their lanterns. *See also footwall.*

**hangnail**

A shred of epidermis at one side of a nail. Hangnail is prevented by gently pushing the cuticle instead of cutting it, and it is treated by clipping off the shred of skin and applying antiseptic to the area to prevent infection.

**HANS™**

*See Head And Neck Support.*

**happiness sheet**

*(slang)* A written survey obtained from students at the end of a course or training session to provide feedback to the instructor regarding various aspects of the training.

**HAPS**

Hazardous air pollutants.

**haptic**

Pertaining to the sensation of pressure.

**haptophore**

*Anatomy.* The specific group of atoms in a toxin molecule by which it attaches itself to another molecule. It is capable of neutralizing antitoxin and of acting as an antigen to stimulate specific antitoxin production by body cells.

**harassment of wildlife**

Any act of pursuit, torment, or annoyance which has the potential to injure wildlife or has the potential to disturb wildlife by causing disruption of behavioral patterns, including,

but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering.

**harbor**

An area of water where ships, planes, or other watercraft can anchor or dock. *See also port.*

**harbor line**

*See permit line.*

**harbor master**

*Maritime Safety.* An officer who attends to the berthing, etc. of ships in a harbor.

**hard hat**

A safety helmet maintained in position on the head by straps, for protecting the wearer from being injured by falling objects.



*Typical hard hat (or "safety helmet")*

**hard light**

A light source which causes objects to cast well-defined shadows.

**hard palate**

The anterior portion of the roof of the mouth, backed by the maxilla and palatine bones and covered by mucous membranes. *See also soft palate.*

**hard soap**

Any soap made with sodium hydroxide and packaged in bar form.

**hard water**

Alkaline water containing dissolved salts that interfere with some industrial processes and prevent soap from lathering.

**hardcopy**

A paper or other sheeted material display.

**hardware**

*Computers.* The physical equipment used in processing. The equipment or components made of physical materials, often referring to

electronics and structural portion of a computer.

**hardwired**

A system in which there is a direct connection of components by electrical wires or cables.

**harelip**

Congenitally cleft lip.

**harmful**

Term indicating the potential for an agent or condition to produce injury or an adverse health effect.

**harmful quantities of oil discharge**

Any discharge that violates a water quality standard or causes a film or sheen upon the surface of the water.

**harmful quantity**

With regard to oil and hazardous substances, those which may be harmful to the public health or welfare and includes harm to fish, shellfish, wildlife, and public and private property, shorelines, and beaches. EPA further defines a hazardous quantity of oil as an amount which either violates applicable water quality standards, or causes a surface film or sheen, or a discoloration of the water or adjoining shoreline.

**harmless error doctrine**

The doctrine that minor or harmless errors during a trial do not require reversal of the judgement by an appellate court. An error which is trivial or formal or merely academic and was not prejudicial to the substantial rights of the party assigning it, and in no way affected the final outcome of the case.

**harmonic**

In acoustics, a tone in the harmonic series of overtones that are produced by the fundamental tone. A frequency component at a frequency that is an integer multiple of the fundamental frequency. *See also [harmonic series](#).*

**harmonic motion**

*See [simple harmonic motion](#).*

**harmonic series**

A set of overtones whose frequencies are separated by integral multiples of the fundamental frequency.

**harmonic vibration**

*See [simple harmonic motion](#).*

**Harmonized System of Codes**

An international goods classification system for describing cargo in international trade under a single commodity coding scheme. This code is a hierarchically structured product nomenclature containing approximately 5,000 headings and subheadings.

**harness**

Any combination of straps intended to hold an occupant of a vehicle in his/her seat, especially those straps holding the torso against the seatback.

**Harrison Antinarcotic Act**

A federal law, enacted March 1, 1915, that regulates the possession, sale, purchase, and prescription of opium and cocoa and all their preparations, natural and synthetic derivatives, and salts. These include the drugs cocaine, morphine, codeine, and papaverine. Laws patterned after the Harrison Antinarcotic Act in some states prohibit the possession or sale of derivatives of barbituric acid except under proper licenses, so that they may not be dispensed without a prescription.

**Hashimoto's disease**

A progressive disease of the thyroid gland with degeneration of its epithelial elements and replacement by lymphoid and fibrous tissue. Also called *struma lymphomatosis*.

**hashish**

The stalks and leaves of the hemp plant, cannabis, with narcotic properties similar to those of marijuana.

**hat**

Any head covering made largely of soft materials, but having a rigid shape.

**HAT**

*See [height above touchdown](#).*

**hatch**

A full-body or materials passageway through some solid structure which may be sealed to separate different fluids or pressures.

**haulage cost**

Cost of loading ore at a mine site and transporting it to a processing plant.

**hauling post holes**

*Transit (slang).* Driving an empty truck or trailer.

**have numbers**

*Aviation.* Communication protocol. Term used by pilots to inform Air Traffic Control (ATC) that they have received runway, wind, and altimeter information only.

**HAVS**

Hand arm vibration syndrome.

**hawser**

A tow line.

**Hawthorne effect**

A phenomenon in which employee-perceived interest by the employer proved to be a factor in productivity and employee moral. Specifically, intentional variations in physical work environment variables (such as lighting, ventilation, noise, etc.) were examined in an experiment and resulted in conclusions that were opposite to those expected (i.e., employees worked harder when environmental conditions were made worse) thereby confounding the experiment. Apparently, it did not matter what the employer did to affect the environmental conditions. The employees viewed these variations in environmental conditions as interest by the employer in their work. They therefore worked harder to impress their employers. This phenomenon is based on a study conducted at the Western Electric Company Hawthorne Works plant in Chicago, Illinois. It is often generalized to apply to confounded results from unconsidered variables in experiments.

**hay fever**

An allergy characterized by sneezing, itchy and watery eyes, running nose, and burning palate and throat. Like all allergies, hay fever is caused by sensitivity to certain substances—most commonly pollens and the spores of molds. Pollen is the fertilizing element of flowering plants. It is a fine dust, easily airborne, that enters the body by inhalation. Hay fever deserves to be recognized as more than a mere nuisance. By causing lack of sleep and loss of appetite, it can lower the body's resistance to disease. It can cause inflammation of the ears, sinuses, throat, and bronchi. A number of hay fever sufferers develop asthma.

**hazard**

(1) *General.* A risky, perilous, or dangerous condition or situation that could result in the

exposure of individuals to unnecessary physical or health risks. Hazards can be biological, chemical, physical, mechanical, human-made, or naturally occurring. (2) *Safety.* A dangerous condition, potential or inherent, that can interrupt or interfere with the expected orderly progress of an activity. It is any real or potential condition which either has previously caused or could reasonably be expected to cause personal injury or property damage. (3) *System Safety.* A condition or situation that exists within the working environment capable of causing an unwanted release of energy resulting in physical harm, property damage, or both. (4) *Toxicology.* Potential for harm to humans or what they value. For toxic substances, hazard refers to the probability that injury will occur under stated sets of exposure conditions. (5) *Industrial Hygiene.* A material poses a hazard if it is likely that an individual will encounter a harmful exposure to it. Hazard is the estimated potential of a chemical, physical agent, ergonomic stress, or biologic organism to cause harm based on the likelihood of exposure, the magnitude of exposure, and the toxicity or effect. (6) *Law.* A risk or peril, assumed or involved, whether in connection with contract relation, employment, personal relation, sport, or gambling. A danger or risk lurking in a situation which by change or fortuity develops into an active agency of harm. Exposure to the chance of loss or injury. (7) *Insurance.* The risk, danger, or probability that the event insured against may happen, varying with the circumstances of the particular case.

**hazard analysis**

The analysis of systems, processes, and/or procedures to determine potential hazards and recommended actions to eliminate or control those hazards.

**hazard and operability study (HAZOP)**

A formal, structured investigative system for examining potential deviations of operations from design conditions that could create process-operating problems and hazards.

**hazard classification**

Designation of relative accident potential based on the likelihood that an accident will occur.

### **Hazard Communication Standard**

A regulatory requirement, as promulgated by OSHA (29 CFR 1910.1200) that establishes requirements for the evaluation of the hazards of chemicals used in industry, labeling of chemical containers, preparation of material safety data sheets (MSDS), training of employees and the provisions of employee access to information about the potential hazards of chemicals they handle. Also known as "Right to Know" or "Worker Right to Know."

### **hazard correction**

The elimination or control of a workplace hazard in accord with the requirements of applicable federal or state statutes, regulations, or standards.

### **hazard elimination**

The removal of a known, already existing hazard.

### **hazard identification**

See *hazardous identification*.

### **hazard pay**

See *hazardous duty pay*.

### **hazard probability**

A measure of the likelihood that a condition or set of conditions will exist or occur in a given situation or operating environment.

### **hazard proof**

A method of making electrical equipment safe for use in hazardous locations; these methods include explosion proofing, intrinsically safe, purged, pressurized, and nonincendiary, and must be rated for the degree of hazard present.

### **hazard quotient**

The ratio of a single substance exposure level over a specified period of time (e.g., chronic) to a reference dose for that substance derived from a similar exposure period.

### **hazard ranking system**

See *hazardous ranking system*.

### **hazard recognition**

In terms of OSHA compliance, a concept based upon the premise that hazardous conditions cannot be eliminated or controlled until they are first recognized as such by the employer. An important concept since employers cannot be held in violation of a requirement if they did not recognize that the hazardous condition existed.

### **hazard risk index**

See *risk assessment code*.

### **hazard severity**

A categorical description of hazard level or degree, based upon real or perceived potential for resulting in harm, injury, and/or damage caused by a given hazard condition.

### **hazard to navigation**

*Marine Safety*. For the purpose of 49 CFR 195, a pipeline where the top of the pipe is less than 12 inches below the seabed in water less than 15 feet deep, as measured from the mean low water.

### **hazard warning signal**

*Transit*. Lamps that flash simultaneously to the front and rear, on both the right and left sides of a commercial motor vehicle, to indicate to an approaching driver the presence of a vehicular hazard.

### **hazard zone**

(1) *DOT*. One of four levels of hazard (Hazard Zones A through D) assigned to gases, as specified in 49 CFR 173.116(a), and one of two levels of hazards (Hazard Zones A and B) assigned to liquids that are poisonous by inhalation, as specified in 49 CFR 173.133(a). A hazard zone is based on the LC<sub>50</sub> value for acute inhalation toxicity of gases and vapors, as specified in 49 CFR 173.133(a). (2) *Maritime Navigation*. An area identified as a danger to maritime navigation.

### **hazardous**

Exposed to or involving danger; perilous; risky; involving risk of loss.

### **hazardous air pollutants**

Air pollutants which are not covered by ambient air quality standards but which, as defined in the Clean Air Act, may reasonably be expected to cause or contribute to irreversible illness or death. Such pollutants include asbestos, beryllium, mercury, benzene, coke oven emissions, radionuclides, and vinyl chloride.

### **Hazardous and Solid Waste Amendments of 1984 (HSWA)**

A set of statutory amendments that expanded and strengthened the Resource Conservation and Recovery Act (RCRA) of 1976.



**hazardous area reporting service**

Flight monitoring for Visual Flight Rules (VFR) aircraft crossing large bodies of water, swamps, and mountains. This service is provided for the purpose of expeditiously alerting Search and Rescue (SAR) facilities when required. Radio contacts are desired at least every 10 minutes. If contact is lost for more than 15 minutes, SAR will be alerted.

**hazardous assessment**

Help to define the potential adverse health or environmental effects associated with chemicals on site, the potential magnitude to exposure, and the frequency of exposure.

**hazardous atmosphere**

(1) *General.* Any atmosphere which is oxygen deficient or contains toxic or other types of health hazards at concentrations exceeding established exposure limits. It is also considered to be an atmosphere that may expose personnel to the risk of death, incapacitation, or impairment of one's ability for self-rescue, injury, or illness. (2) As pertains to *confined spaces*, an atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue (that is, escape unaided from a permit space), injury, or acute illness from one or more of the following causes:

- (1) Flammable gas, vapor, or mist in excess of 10 percent of its lower flammable limit (LFL).
- (2) Airborne combustible dust at a concentration that meets or exceeds it LFL. This concentration may be approximated as a condition in which the dust obscures vision at a distance of 5 feet (1.52 m) or less.
- (3) Atmospheric oxygen concentration below 19.5% or above 23.5%.
- (4) Atmospheric concentration of any substance for which a dose or a permissible exposure limit is published in Subpart G, *Occupational Health and Environmental Control*, or in Subpart Z, *Toxic and Hazardous Substances*, of OSHA 29 CFR 1910 and which could result in employee exposure in excess of its dose or permissible exposure limit. An atmospheric concentration of any substance that is not capable of causing death, incapacitation, impairment of ability to self-rescue, in-

jury, or acute illness due to its health effects is not covered by this provision.

- (5) Any other atmospheric condition that is immediately dangerous to life or health. For air contaminants for which OSHA has determined a dose or permissible exposure limit, other sources of information, such as material safety data sheets that comply with the hazard communication standard (OSHA 29 CFR 1910.1200), published information, and internal documents can provide guidance in establishing acceptable atmospheric conditions.

**hazardous chemical**

According to OSHA (29 CFR 1910.1200), any chemical that is a health or physical hazard and for which there is statistically significant evidence that acute or chronic health effects may occur in exposed individuals.

**hazardous condition**

Circumstances which are causally related to an exposure to a hazardous material.

**hazardous employment**

High risk and extra perilous work. When used in the context of workers' compensation, it refers to employment which requires the employer to carry workers' compensation coverage or its equivalent regardless of the number of employees.

**hazardous duty pay**

The additional monetary compensation given to workers performing dangerous tasks.

**hazardous goods**

The categories of hazardous goods carried by inland waterways are those defined by the European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterways.

**hazardous identification**

(1) The identification of those chemicals that may pose a threat to human health or the environment. (2) An initial evaluation of media (air, water, soil, etc.) that may be contaminated and the chemicals that are most likely to present a public health threat.

**Hazardous In-flight Weather Advisory Service (HIWAS)**

Continuous recorded hazardous in-flight weather forecasts broadcasted to airborne pi-

lots over selected very high frequency omnidirectional (VOR) outlets defined as an HI-WAS BROADCAST AREA.

**hazardous insurance**

Insurance effected on property which is in unusual or peculiar danger of destruction by fire, or on the life of a person whose occupation exposes him/her to special or unusual perils.

**hazardous LBB**

A pressure vessel that exhibits a *leak before burst*, or *LBB*, failure mode and contains a hazardous material.

**hazardous liquid**

*DOT.* (1) Liquefied Natural Gas (LNG) or a liquid that is flammable or toxic. (2) Petroleum, petroleum products, or anhydrous ammonia.

**hazardous material (HAZMAT)**

(1) *General.* Any substance or compound that has the ability to produce an adverse health effect in a worker. (2) *DOT.* A substance or material which has been determined by the Secretary of Transportation to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce, and which has been so designated. The term includes hazardous substances, hazardous wastes, marine pollutants, and elevated temperature materials as defined in this section, materials designated as hazardous under the provisions of 49 CFR 172.101 and 172.102, and materials that meet the defining criteria for hazard classes and divisions in 49 CFR 173. See also *highly volatile liquid* and *marine pollutant*.

**hazardous material employee**

A person who is employed by a HAZMAT employer and who in the course of employment directly affects hazardous materials transportation safety. This term includes an owner-operator of a motor vehicle which transports hazardous materials in commerce. This term includes an individual, including a self-employed individual, employed by a HAZMAT employer who, during the course of employment: a) loads, unloads, or handles hazardous materials; b) tests, reconditions, repairs, modifies, marks, or otherwise represents containers, drums, or packaging as qualified for use in the transportation of haz-

ardous materials; c) prepares hazardous materials for transportation; d) is responsible for safety of transporting hazardous materials; or e) operates a vehicle used to transport hazardous materials.

**hazardous material employer**

A person who uses one or more of its employees in connection with transporting hazardous materials in commerce; causing hazardous materials to be transported or shipped in commerce; or representing, marking, certifying, selling, offering, reconditioning, testing, repairing, or modifying containers, drums, or packaging as qualified for use in the transportation of hazardous materials. This term includes an owner-operator of a motor vehicle which transports hazardous materials in commerce. This term also includes any department, agency, or instrumentality of the United States, a State, a political subdivision of a State, or an Indian tribe engaged in an activity described in the first sentence of this definition.

**hazardous material residue**

The hazardous material remaining in a packaging, including a tank car, after its contents have been unloaded to the maximum extent practicable and before the packaging is either refilled or cleaned of hazardous material and purged to remove any hazardous vapors.

**Hazardous Material Transportation Act of 1974 (HMTA)**

This statute provides the United States Department of Transportation with the authority to issue and enforce requirements for the packaging, labeling, and transporting of all hazardous materials including wastes. These requirements cover transportation by air, water, rail, or highway.

**hazardous materials**

(1) *General.* Liquids, gases, or solids that may be toxic, reactive, or flammable or that may cause oxygen deficiency either by themselves or in combination with other materials. (2) *DOT.* Any toxic substance, explosive, corrosive material, combustible material, poison, or radioactive material that poses a risk to the public's health, safety, or property when transported in commerce.

## **Hazardous Materials Incident Report System HMIRS**

HMIRS contains hazardous material spill incidents reported to the Department of Transportation.

### **hazardous pressure systems**

Systems used to store and transfer hazardous fluids such as cryogenics, flammables, combustibles, hypergols, etc.

### **hazardous ranking system (HRS)**

The principle screening tool used by the EPA to evaluate risks to public health and the environment associated with abandoned or uncontrolled hazardous wastes sites. The HRS calculates a score based on the potential of hazardous substances spreading from the site through the air, surface water, or groundwater and on other factors such as nearby populations. This score is the primary factor in deciding if the site should be on the National Priorities List and, if so, what ranking it should have compared to other sites.

### **hazardous ranking system factor**

Primary rating elements internal to the hazardous ranking system (HRS). *See also [hazardous ranking system](#).*

### **hazardous ranking system factor category**

Set of HRS factors, such as likelihood of release (or exposure), waste characteristics, targets. *See also [hazardous ranking system](#).*

### **hazardous ranking system migration pathways**

HRS groundwater, surface water, and air migration pathways. *See also [hazardous ranking system](#).*

### **hazardous ranking system pathway**

Set of HRS factor categories combined to produce a score to measure relative risks posed by a site in one of four environmental pathways (i.e., groundwater, surface water, soil, and air). *See also [hazardous ranking system](#).*

### **hazardous ranking system site score**

A composite of the four HRS pathway scores. *See also [hazardous ranking system](#) and [hazardous ranking system pathway](#).*

### **hazardous secondary materials**

As defined by the Resource Conservation and Recovery Act (RCRA), any spent materials,

sludges, byproducts, commercial chemical products, and scrap metals.

### **hazardous substance**

(1) *General*. Any material that poses a threat to human health and/or the environment. Typical hazardous substances are toxic, corrosive, ignitable, explosive, or chemically reactive. (2) *EPA*. Any substance designated by the EPA to be reported if a designated quantity of the substance is spilled in the waters of the United States or if otherwise emitted to the environment. (3) *DOT*. A material, and its mixtures or solutions, that a) is identified in the appendix to 49 CFR 172.101; b) is in a quantity, in one package, which equals or exceeds the reportable quantity (RQ) listed in Appendix A to 49 CFR 172.101; and c) when in a mixture or solution which, for radionuclides, conforms to paragraph 6 of Appendix A, or, for other than radionuclides, is in a concentration by weight which equals or exceeds the concentration corresponding to the Reportable Quantity (RQ) of the material, as shown in the table appearing in 49 CFR 171.8. This definition does not apply to petroleum products that are lubricants or fuels.

### **hazardous waste**

(1) Byproducts of society that can pose a substantial or potential hazard to human health or the environment when improperly managed. Possesses at least one of four characteristics (ignitability, corrosivity, reactivity, or toxicity), or appears on any special EPA list. (2) A hazardous material generated as the result of an industrial, research, commercial, domestic, or institutional process for which no intended further use or reuse is anticipated. (3) A solid waste or a combination of solid wastes which, because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause, or significantly contribute to an increase in mortality or an increase in or pose a substantial present or potential hazard to human health or the environment when properly treated, stored, transported, or disposed of, or otherwise managed. (4) Any material that is subject to the hazardous waste manifest requirements of the Environmental Protection Agency (EPA) specified in 40 CFR 262 or would be subject to these requirements absent an interim authorization to a State under 40 CFR 123, subpart F.

**hazardous waste management**

According to the Federal Solid Waste Disposal Act: The systematic control of the collection, source separation, storage, transportation, processing, treatment, recovery, and disposal of hazardous wastes.

**hazardous waste stream**

Material containing hazardous substances, as defined by CERCLA, that are deposited, stored, disposed, or placed in, or that otherwise migrated to, a source.

**hazards analysis**

The procedure involved in identifying potential sources of release of hazardous materials from fixed facilities or transportation accidents; determining the vulnerability of a geological area to a release of hazardous materials; and comparing hazards to determine which present greater or lesser risks to a community.

**hazards identification**

(1) Providing information on which facilities have extremely hazardous substances, what those chemicals are, and how much there is at each facility. The process also provides information on how the chemicals are stored and whether they are used at high temperatures. (2) The process of determining whether or not exposure to an agent can cause an increase in the incidence of a particular adverse health effect (e.g., cancer, birth defect) and whether the adverse health effect is likely to occur in humans. *See also hazardous identification.*

**HazCAT**

A procedure or set of procedures developed for systematically performing simple, on-site analytical tests for determining the chemical nature (generically) of unknown, potentially hazardous materials.

**haze**

(1) Fine dry or wet dust or salt particles dispersed through a portion of the atmosphere. Individually these are not visible but cumulatively they can diminish visibility. (2) A cloudiness in a surface or coating.

**HAZMAT**

*See hazardous material.*

**HAZOP**

*See hazard and operability study.*

**Hb**

*See hemoglobin.*

**HBAO**

*See high boiling aromatic oils.*

**HbCO**

*See carboxyhemoglobin.*

**HbO<sub>2</sub>**

*See oxyhemoglobin.*

**HBV**

*See Hepatitis B Virus.*

**H<sub>c</sub>**

*See hue composition.*

**HCI**

*See human-computer interface.*

**HCP**

Hearing conservation program. *See hearing conservation.*

**HDL**

*See high density lipoprotein.*

**HDTV**

*See high-definition television.*

**head**

(1) *Pressure Systems.* Term used for indicating pressure such as a head of one inch water gauge. (2) *Hydrology.* The product of the water's weight and a usable difference in elevation gives a measurement of the potential energy possessed by water. (3) *Military.* Marine restroom facility. (4) *Anatomy.* That part of the human body superior to the neck when standing erect, including the skull and facial bones, skin, brain, and other associated tissues. Also, a point of origin, as in a muscle.

**Head And Neck Support (HANS™)**

A head, neck, and upper torso restraint modeling system, consisting of a helmet and tethers, for minimizing neck injuries in a vehicular crash.

**head breadth**

The maximum linear side-to-side width of the head superior to the auricles. Measured at whatever level provides the maximum, with minimal tissue compression.

**head circumference**

The maximum surface distance around the head, including the hair, at a level just above, but not including, the brow ridges. Measured

with hair compression. Also referred to as *occipitofrontal circumference*.

**head diagonal, inion to pronasale**

The linear distance from inion to pronasale. Measured with the face and scalp muscles relaxed, without tissue compression.

**head diagonal, maximum, menton to occiput**

The maximum linear distance from menton to occiput. Measured with the face and scalp muscles relaxed, without tissue compression.

**head diagonal maximum, nuchale to pronasale**

The maximum linear distance from nuchale to pronasale. Measured with the face and scalp muscles relaxed, without tissue compression.

**head-down display**

A display, generally located on a control panel, which requires the operator to lower his/her normal line of sight to obtain the desired information.

**head height**

The vertical distance between tragion or the lowest point on the inferior orbit and the horizontal plane which intersects the vertex in the midsagittal plane. This uses a restricted definition of "head."

**head impact area**

*Automotive Safety Design.* All nonglazed surfaces of the interior of a vehicle that are statically contactable by a 6.5-inch diameter spherical head form of a measuring device having a pivot point to "top-of-head" dimension infinitely adjustable from 29 to 33 inches in accordance with the procedure explained in 49 CFR 390.5.

**Head Injury Criterion (HIC)**

A measure for determining the tolerance to concussion in a head impact, based on the duration and acceleration involved. An HIC value of 1000 with a duration of less than 15 msec is an acceptable tolerance.

$$HIC = [t_2 - t_1] \left[ \frac{1}{t_2 - t_1} \int_{t_1}^{t_2} a(t) dt \right]^{2.5}$$

where:

- $t_1$  = start time of impact
- $t_2$  = end time of impact
- $a(t)$  = acceleration function (in g units)

**head lamps**

Lamps used to provide general illumination ahead of a motor vehicle.

**head length**

See *glabella – inion length*.

**head length, maximum**

The horizontal linear distance between pronasale and inion in the midsagittal plane.

**head log**

*Maritime.* The heavily reinforced section at each end of the barges and at the bow of the towboat to take the pressure of pushing the entire tow.

**head-mounted display (HMD)**

Any system which can be attached to the head, neck, and/or shoulders for enabling presentation of a head-up display.

**head movement**

Any motion of the head as a unit, relative to the torso.

**head of bend**

*Maritime.* The top or upstream beginning of a bend.

**head of navigation**

The furthest (upriver) location on a river deep enough for navigation.

**head of passes**

A point near the mouth of the Mississippi River where the three principal tributary passes diverge. It is the point from which river distances are measured.

**head-on collision**

(1) *General Transit.* Refers to a collision where the front end of one vehicle collides with the front-end of another vehicle while the two vehicles are traveling in opposite directions. (2) *Rail Operations.* A collision in which the trains or locomotives involved are traveling in opposite directions on the same track.

**head on landing**

*Maritime.* Landing in which the bow of the boat only is made fast.

**head scan**

Scan through the visual environment using head movements, allowing for accompanying eye movements.

**head-up display (HUD)**

A display in which information is presented on a nearby transparent surface such that the operator is capable of viewing both the information and the external world with his/her normal line of sight.

**headache**

A pain or ache in the head. One of the most common ailments of man, it is a symptom rather than a disorder in itself. It accompanies many diseases and conditions, including emotional distress. Although recurring headache may be an early sign of serious organic disease, relatively few headaches are caused by disease-induced structural changes. Most result from vasodilation of blood vessels in tissues surrounding the brain, or from tension in the neck and scalp muscles.

**headache rack**

*Transit (slang).* Heavy bulkhead that extends over cab from trailers, usually made of pipe and used in steel hauling.

**header bar**

The rear cross piece on open top trailer.

**header board**

A protective shield at the front end of a flat-bottom trailer to prevent freight from shifting forward.

**headform**

An object whose shape resembles that of the human head for sizing, modeling, or simulation purpose.

**headgear**

Any protective structure worn on the head to protect the individual from possible injury due to hazards, usually from impacts.

**headgear retention**

A measure of the ability of a piece of headgear to remain in place during an impact and any post-impact events.

**headgear retention assembly**

Any combination of chinstraps, internal form fitting, or other techniques to aid in headgear retention.

**headline**

A mooring line used in combination to hold a fleet or barge "in."

**headrest**

Any padded structure which provides support to the head when sitting or reclining.

**headroom**

That distance available to accommodate an individual's head, generally referring to that distance between the vertex of an individual's head and a roof, passageway, or other limiting environmental feature when standing, sitting, walking, or other motion/posture as the situation requires.

**headset**

A device having one or a pair of transducers for converting electrical energy to sound and having a spring mechanism or other device over the head, under the jaw, or around the neck to hold it/them in place.

**headwaters**

The upper part of a river system, denoting the upper basin and source streams of a river.

**headwear**

Any form of clothing worn only on or around the head, such as a hat, cap, or helmet.

**headway**

The time interval between transit revenue vehicles passing a specified location.

**healing**

The restoration of structure and function of injured or diseased tissues. The healing processes include blood clotting, tissue mending, scarring, and bone healing.

**health**

A state in which an individual's and/or population's mental, physical, physiological, and social conditions are within normal limits. *See also **mental health** and **physical health**.*

**health and safety study**

As defined by TSCA, any study of any effect of a chemical substance or mixture on health and/or the environment, including underlying epidemiological studies, studies of occupational exposure, toxicological, clinical, and ecological studies of a chemical substance or mixture.

**health assessments**

Under the Federal Solid Waste Disposal Act: Includes preliminary assessments of the potential risk to human health posed by individual sites and facilities subject to the Federal Solid Waste Disposal Act, based on such factors as the nature and extent of contamination, the existence of a potential for pathways of human exposure (e.g., ground or



surface water contamination, air emissions, and food chain contamination), the size and potential susceptibility of the community within the likely pathways of exposure, the comparison of expected human exposure levels to the short-term and long-term health effects associated with identified contaminants and any available recommended exposure or tolerance limits for such contaminants, and the comparison of existing morbidity and mortality data on diseases that may be associated with the observed levels of exposure. The assessment includes evaluation of the risks to the potentially affected population from all sources of such contaminants, including known point or non-point sources other than the site or facility in question. A purpose of such preliminary assessments shall be to help determine whether full-scale health or epidemiological studies and medical evaluations of exposed populations shall be taken.

**health care facilities**

Buildings or portions of buildings and mobile homes that contain, but are not limited to, hospitals, nursing homes, extended care facilities, clinics, and medical and dental offices, whether fixed or mobile.

**health hazard**

A property of a chemical, mixture of chemicals, physical stress, pathogen, or ergonomic factor for which there is statistically significant evidence, based on at least one test or study conducted in accordance with established scientific principles, that acute or chronic adverse health effects may occur among workers exposed to the agent.

**health index**

Any qualitative or quantitative measure for describing the relative or absolute health of an individual or a population.

**health insurance**

A program which includes some percentage of payment or reimbursement for medical, dental, vision, counseling, and/or other care beyond a specified deductible limit. Often a fringe benefit paid at least in part by employers and generally used to provide financial protection in the event of a major family health problem.

**health physicist**

An individual trained in radiation (ionizing) physics, its associated health hazards, the means to control exposures to this physical hazard, and in establishing procedures for work in radiation areas.

**health physics (HP)**

The branch of radiological science dealing with the protection of personnel from harmful effects of ionizing radiation.

**Health Physics Society (HPS)**

Professional society of persons active in the field of health physics, the profession devoted to the protection of people and their environment from radiation hazards.

**health standard**

Those standards that generally prescribe requirements for worker exposure to hazards presented by toxic substances. Such hazards usually involve the potential for long-term adverse health effects (such as those posed by exposure to lead, noise, asbestos, silica, radiation, vibration, etc.).

**healthy worker effect**

A phenomenon observed in studies of occupational diseases in which workers exhibit lower death rates than the general population because hospitalized, severely ill, and many disabled persons have been excluded from employment and those that are employed are generally healthy.

**hearing**

(1) *Anatomy*. The physiological process of sound perception. That specialized sense through which sound is perceived, by conversion of sound waves into nerve impulses, which are then interpreted by the brain. (2) *Legal*. A legal proceeding convened at an announced time and place for a governmental purpose; for instance, to entertain new legislation, consider promulgating new regulations, hear an applicant for a permit or license, consider revoking or amending such an approval, present evidence, hear motions by parties, or announce decisions. Some hearings are *public hearings* required by law to be conducted with an opportunity for the public to attend. Others are *adjudicatory hearings* where only the interested parties and their representatives and witnesses attend. A *public meeting* at which a board or other tribunal deliberates is not necessarily a *public hearing*.

**hearing aid**

A device which amplifies sound intensity or filters noise, typically for use by persons with hearing impairments.

**hearing conservation**

The prevention or minimizing of occupational noise-induced hearing defects through the combined use of hearing protectors, training, the use of engineering and administrative control measures, annual audiometric testing, and the establishment of a written program. The written program is referred to as a *hearing conservation program (HCP)*.

**hearing impaired**

A person with a hearing loss sufficient to affect their efficiency in the course of everyday living.

**hearing impairment**

(1) Loss of the ability to hear, either partially or completely. (2) The deviation of an individual's absolute auditory threshold in decibels using a calibrated audiometer or by comparison to the absolute auditory threshold of a person with normal hearing. Also called *hearing loss*.

**hearing level**

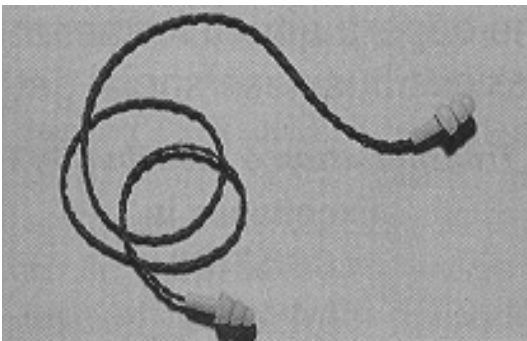
The deviation, in decibels, of an individual's hearing threshold at various test frequencies as determined by an audiometric test based on an accepted standard reference level. *See also hearing threshold.*

**hearing loss**

*See hearing impairment.*

**hearing protection**

*See hearing protective device.*



*Common earplugs, a type of hearing protective device*

**hearing protective device (HPD)**

Any device or material, capable of being worn on the head or in the ear canal, that is sold wholly or in part on the basis of its ability to reduce the level of sound entering the ear. This includes devices of which hearing protection may not be the primary function, but which are nonetheless advertised as providing hearing protection to the user.

**hearing scotoma**

*See tonal gap.*

**hearing test**

Any method of evaluating hearing capabilities. *See also audiometry and tuning fork test.*

**hearing threshold**

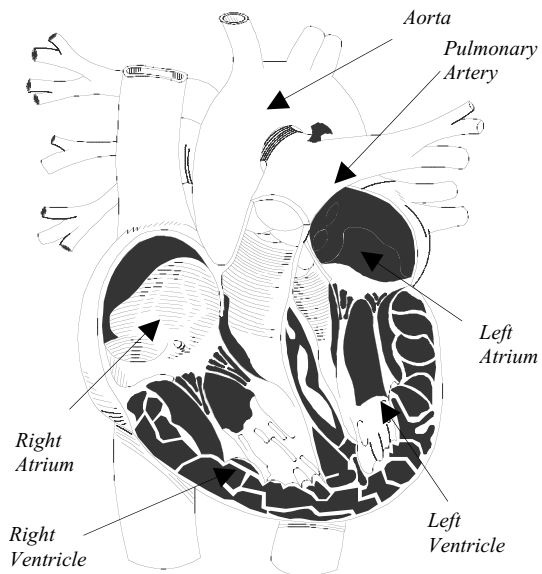
The weakest or minimally perceived sound, in decibels, that an individual can detect during an audiometric test at a particular time.

**hearsay**

A term applied to that species of testimony given by a witness who relates, not what he/she knows personally, but what others have told him/her, or what he/she has heard said by others.

**heart**

The multi-chambered muscular organ within the thorax which pumps blood through the circulatory system.



*Cross-section of the human heart, showing its four chambers*

**heart block**

A condition in which the atria and ventricles of the heart contract independently, causing interference in the rate or regularity of the heartbeat.

**heart failure**

Inability of the heart to perform its proper function of expelling blood from the ventricles.

**heart-lung machine**

A mechanical device that temporarily takes over the functions of the heart and lungs. It is used as an aid during surgery.

**heart murmur**

Any sound in the heart region other than normal heart sounds. A murmur may be caused by several different factors, including changes in the valves of the heart or blood leaking through a disease-scarred valve that does not close properly.

**heart rate**

The number of complete heart contraction cycles per minute. Synonymous with *pulse rate*.

**heartbeat**

The cycle of contraction of the heart muscle, during which the chambers of the heart contract. The beat begins with a rhythmic impulse in the sinoatrial node, which serves as a pacemaker for the heart.

**heartburn**

*(slang)* A burning sensation in the esophagus, or below the sternum in the region of the heart. It is one of the common symptoms of indigestion. *See also reflux esophagitis.*

**heat**

The energy associated with a mass because of random motions of its molecules. It is a form of energy that is transferred between systems by virtue of their individual temperature differences.

**heat acclimatization**

A physiological adjustment to living or working at higher external temperatures and/or humidity.

**heat balance**

The difference between the heat produced by the body and that which is given off to the environment.

**heat capacity**

That heat energy absorbed by an object under given conditions for each degree rise in temperature. *See also specific heat.*

**heat collapse**

*See heat exhaustion.*

**heat conduction**

Heat transfer from one entity to another via direct contact.

**heat conservation**

Any mechanism such as peripheral vasoconstriction, piloerection, or reduction in sweating which may be used to retain heat within the body. Also referred to simply as *heat retention*.

**heat convection**

Heat transfer from one entity to another or within an entity via a fluid capable of storing heat, such as air.

**heat cramps**

A condition related to work and/or exercise in hot environments that causes painful muscle spasms due to heavy swelling and the consumption of large amounts of water without adequate salt intake and adequate exercise-rest balance.

**heat disorder**

Any condition resulting from exposure to heat or hot work environments that results in an adverse effect on the health of the exposed individual. Such disorders include heat cramps, heat exhaustion, heat stress, and heat stroke. Also may be referred to as *heat stress*.

**heat drying**

A process to reduce pathogens in solid waste by drying dehydrated sludge cake by direct or indirect contact with hot gases, and reducing moisture content to ten percent or lower.

**heat exchanger**

Device for transferring heat from one fluid or body to another for the purpose of heating or cooling.

**heat exhaustion**

A potentially dangerous condition caused by work and exertion in high-temperature environments marked by mild elevation in body temperature, weak pulse, pale complexion, dizziness, fainting, profuse sweating, headache, low blood pressure, and cool, moist

skin. Synonymous with *heat collapse* and *heat prostration*.

**heat index**

See *heat stress index*.

**heat island effect**

A "dome" of elevated temperatures over an urban area caused by structural and pavement heat fluxes, and pollutant emissions from the area below the dome.

**heat lightning**

Distant lightning that illuminates the sky but is too far away for its thunder to be heard.

**heat loss**

The release of heat from the body to the environment via conduction, convection, radiation, or evaporation.

**heat of fusion**

The heat released by a liquid freezing to a solid, or that gained by a solid melting to a liquid without a change in temperature.

**heat prostration**

See *heat exhaustion*.

**heat pyrexia**

See *heat stroke*.

**heat radiation**

The transfer of heat via electromagnetic radiation. Also called *thermal radiation*.

**heat rash**

See *miliaria*.

**heat ray cataract**

An opacity in the lens of the eye which occurs in occupations requiring long exposures to high temperatures and glare. See also *glass blower's cataract*.

**heat regulation**

See *thermoregulation*.

**heat retention**

See *heat conservation*.

**heat strain predictive system**

A method for predicting heat stress based on variable clothing effect.

**heat stress**

Thermal stress upon the body from the surrounding environment, including heat stroke, heat cramps, and heat exhaustion, caused by the body's inability to rid itself of excessive heat. See also *heat disorder*.

**heat stress index (HSI)**

Any number of estimators for body heat stress which may be based on temperature, humidity, air velocity, workload, clothing, and their interactions. See also *Belding-Hatch heat stress index*.

**heat stroke**

A serious, potentially life-threatening condition marked by a rapid rise in body temperature, hot dry skin, mental confusion, loss of consciousness, convulsions, coma, and the absence of sweating. The condition is caused by excessive physical exertion in hot environments by unacclimatized individuals and dehydration. Recent intake of alcohol may expedite the onset of the condition.

**heat syncope**

A condition marked by fainting while standing erect and immobile in hot environments caused by the pooling of blood in dilated vessels of the skin and lower part of the body.

**heated wire anemometer**

See *thermoanemometer*.

**heater**

Any device or assembly of devices or appliances used to heat the interior of any motor vehicle. This includes a catalytic heater which must meet the requirements of 49 CFR 177.834(1) when flammable liquid or gas is transported.

**Heath-Carter somatotype**

A body type classification system which uses a combination of anthropometric measures (such as stature, weight, skinfolds, girths, and breadths) for determining or modifying the basic classifications.

**heating degree-day**

A form of the degree-day used as an index for fuel consumption.

**heating equipment**

According to OSHA, 29 CFR 1910.306(g), the term includes equipment used for heating purposes if heat is generated by induction or dielectric methods.

**heating, ventilation, and air conditioning (HVAC) system**

The system that is in place to provide ventilation, heating, cooling, dehumidification, humidification, control of odors, and cleaning of the air for maintaining comfort, safety, and

health of the occupants of a building, workplace, etc.

**heavy duty scaffold**

A scaffold designed and constructed to carry a working load not to exceed 75 pounds per square foot.

**heavy duty truck**

Truck with a gross vehicle weight generally in excess of 19,500 pounds (class 6-8). Other minimum weights are used by various law or government agencies.

**heavy hauler trailer**

A trailer with one or more of the following characteristics: a) its brake lines are designed to adapt to separation or extension of the vehicle frame; or b) its body consists only of a platform whose primary cargo carrying surface is not more than 40 inches above the ground in an unloaded condition, except that it may include sides that are designed to be easily removable and a permanent "front-end structure" as that term is used in 49 CFR 393.106.

**heavy ion**

An ion having a normal atomic mass equal to or greater than that of carbon.

**heavy lifts**

*Maritime.* Freight too heavy to be handled by regular ship's tackle.

**heavy metal**

Metals such as arsenic, barium, cadmium, chromium, lead, mercury, and silver that do not rapidly break down in the body or the environment and thus can exert toxic effects because of their cumulative or residual properties.

**heavy rail**

(1) An electric railway with the capacity for a "heavy volume" of traffic and characterized by exclusive rights-of-way, multi-car trains, high speed and rapid acceleration, sophisticated signaling, and high platform loading. (2) High-speed, passenger rail cars operating singly or in trains of two or more cars on fixed rails in separate rights-of-way from which all other vehicular and foot traffic is excluded. *See also [heavy rail \(rapid rail\)](#).*

**heavy rail passenger cars**

Rail cars with motive capability, driven by electric power taken from overhead lines or third rails, configured for passenger traffic and usually operated on exclusive rights-of-way.

**heavy rail (rapid rail)**

Transit service using rail cars powered by electricity which is usually drawn from a third rail and usually operated on exclusive rights-of-way. It generally uses longer trains and has longer spacing between stations than light rail.

**heavy work**

That level of work activity which involves the entire body and has a gross metabolic cost of 280 – 380 calories per square meter of skin surface per hour.

**hedonic damages**

Damages awarded in some jurisdictions for the loss of enjoyment of life, or for the value of life itself, as measured separately from the economic productive value that an injured or deceased person would have had. It should be noted that many courts hold that such loss is included in damages for disability and pain and suffering.

**heel**

The calcaneus and surrounding soft tissue of the inferior and posterior portion of the foot.

**heel – ankle circumference**

The surface distance around the foot under the tip of the heel and over the instep at the junction of the foot and anterior lower leg. Measured with minimal tissue compression, minimal weight on the foot being measured, and the foot muscles relaxed.

**heel breadth**

The maximum medial to lateral linear width of the heel behind the vertical projection downward from the ankle bones. Measured with the individual's weight equally distributed on both feet and with minimal tissue compression.

**HEG**

*See [homogeneous exposure group](#).*

**height**

The straight-line vertical distance from the floor or other reference surface to the level of the referenced body part or the top of an object.

**height above airport**

The height of the Minimum Descent Altitude above the published airport elevation. This is published in conjunction with circling minimums. *See also minimum descent altitude.*

**height above landing (HAL)**

The height above a designated helicopter landing area used for helicopter instrument approach procedures.

**height above touchdown (HAT)**

The height of the Decision Height or Minimum Descent Altitude above the highest runway elevation in the touchdown zone (first 3,000 feet of the runway). Height above touchdown (HAT) is published on instrument approach charts in conjunction with all straight in minimums.

**height/decision altitude**

A specified altitude or height (A/H) in the precision approach at which a missed approach must be initiated if the required visual reference to continue the approach has not been established. *Note 1:* Decision altitude is referenced to mean sea level and decision height is referenced to the threshold elevation. *Note 2:* The required visual reference means that section of the visual aids or of the approach area which should have been in view for sufficient time for the pilot to have made an assessment of the aircraft position and rate of change of position, in relation to the desired flight path.

**height velocity**

The rate at which stature increases during physical maturation.

**helicopter**

(1) A rotorcraft that, for its horizontal motion, depends principally on its engine-driven rotors. (2) A rotary-wing aircraft which depends principally for its support and motion in the air upon the lift generated by one or more power-driven rotors, rotating on substantially vertical axes. A helicopter is a V/STOL (vertical/short takeoff and landing) aircraft. (3) A heavier-than-air aircraft supported in flight chiefly by the reactions of the air on one or more power-driven rotors on substantially vertical axes. *See also gyroplane.*

**helipad**

A small, designated area, usually with a prepared surface, on a heliport, airport, landing/takeoff area, apron/ramp, or movement area used for takeoff, landing, or parking of helicopters.

**heliport**

(1) An area of land, water, or structure used or intended to be used for the landing and takeoff of helicopters and includes its buildings and facilities if any. (2) An area, either at ground level or elevated on a structure, that is used for the landing and takeoff of helicopters and includes some or all of the various facilities useful to helicopter operations such as helicopter parking, hangar, waiting room, fueling, and maintenance equipment. *See also aerodrome, aircraft facility, and airport.*

**helistop**

A minimum facility heliport, either at ground level or elevated on a structure for the landing and takeoff of helicopters, but without such auxiliary facilities as waiting room, hangar parking, etc.

**helium**

A chemical element, atomic number 2, atomic weight 4.003, symbol He.

**helix**

(1) *Anatomy.* The rolled outer portion of the auricle. (2) *Geometry.* A spiraling geometrical pattern.

**helmet**

(1) A piece of headgear with a hard exterior covering and internal cushioning designed to fit over the top of or enclose the entire head to protect the head from impacts or other hazards. (2) A head protective device consisting of a rigid shell, energy absorption system, and chin strap intended to be worn to provide protection for the head or portions thereof, against impact, flying or falling objects, electric shock, penetration, heat and flame.

**helmet-mounted display (HMD)**

A display projected within or on the visor of a user's helmet such that both the information presented and the external environment are simultaneously within the line of sight.



**Helmholtz resonator**

A passive acoustical filter consisting of a cavity with a narrow neck and an enlarged interior.

**Helmholtz-Kohlrausch effect**

A tendency for apparent brightness to increase as color saturation increases.

**help**

An online software user assistance feature.

**hemangioma**

A benign tumor made up of newly formed blood vessels, clustered together. Hemangioma may be present at birth in various parts of the body, including the liver and bones. In the majority of cases, however, it appears as a network of small blood-filled capillaries near the surface of the skin, forming a reddish or purplish birthmark. These marks are not malignant.

**hematemesis**

The vomiting of blood. The appearance of the vomitus depends on the amount and character of the gastric contents at the time blood is vomited and on the length of time blood has been in the stomach. Gastric acids change the bright red blood to a brownish color and the vomitus is often described as "coffee-ground" color. Bright red blood in the vomitus indicates a fresh hemorrhage and little contact of the blood with gastric juices. The most common causes are peptic ulcer, gastritis, esophageal lesions or varices, and cancer of the stomach. Benign tumors, traumatic postoperative bleeding and swallowed blood from points in the nose, mouth, and throat can also produce hematemesis.

**hematocrit**

The percent by volume of erythrocytes in whole blood.

**hematologist**

An individual trained in the science encompassing the generation, anatomy, physiology, pathology, and therapeutics of blood.

**hematology**

The branch of medical science concerned with the generation, anatomy, physiology, and therapeutics of blood. The study of the form and structure of blood-forming organs.

**hematoma**

(1) An enclosed volume of blood in tissue external to the circulatory system, from whatever cause. (2) A tumor-like mass produced by coagulation of extravasated blood in a tissue or cavity. Contusions (bruises) and black eyes are familiar forms of hematoma that are seldom serious. Hematomas can occur almost anywhere on the body; they are almost always present with a fracture and are especially serious when they occur inside the skull, where they may produce local pressure on the brain. In minor injuries the blood is absorbed unless infection develops. *See also bruise.*

**hematopoietic**

Pertaining to or affecting the formation of blood cells.

**hematopoietic changes**

Changes in the formation of blood cells.

**hematotoxicity**

The toxic effects of various substances and physical agents in blood and blood-forming organs.

**hematuria**

Appearance of blood in the urine.

**heme**

The non-protein, iron-containing part of the hemoglobin molecule that carries oxygen and accounts for the color of blood.

**hemi-**

(*prefix*) Meaning half; pertaining to one side of the body.

**hemianopsia**

A unilateral or bilateral blindness in one half of the visual field.

**hemiballismus**

A unilateral form of ballismus.

**hemiplegia**

A condition in which one side of the body (especially both limbs) is affected by paralysis. Usually caused by a brain lesion, such as a tumor, or by a cerebral vascular accident. The paralysis occurs on the side opposite the brain disorder.

**hemisphere**

Half of a spherical or roughly spherical structure or organ.

**hemochromatosis**

A disorder of iron metabolism with excess deposition of iron in the tissues, skin pig-

mentation, cirrhosis of the liver, and decreased carbohydrate tolerance.

### **hemodynamics**

The study of the physical principles of blood and its circulation.

### **hemoglobin (Hb)**

The red pigment protein matter in the red blood corpuscles that carries oxygen from the lungs to the tissues and carbon dioxide from the tissue to the lungs. Hemoglobin is a chromoprotein, that is, a protein combined with a colored pigment. The protein is globin; the pigment is heme, which is red. When erythrocytes are broken down, degradation of hemoglobin releases the pigment bilirubin which is converted into pigments responsible for the characteristic color of bile. Heme is a complex molecule containing iron. Hemoglobin has the property of combining chemically with certain gases to form various substances. One of the most important is oxyhemoglobin, formed by the combination of oxygen and hemoglobin. This function of hemoglobin is important in respiration because it provides a means of transporting oxygen from the lungs to the tissues. The oxygen combined with hemoglobin in arterial blood is responsible for its bright red color; venous blood is a darker color because of its lower oxygen content. It is important to note that hemoglobin has an affinity towards carbon monoxide approximately 200 times greater than that for oxygen. This explains why carbon monoxide poisoning can occur so quickly.

### **hemoglobinuria**

Excretion of hemoglobin in the urine.

### **hemolysis**

Breakdown of red blood cells or erythrocytes with the release of hemoglobin into the blood plasma. This results in hemoglobinuria.

### **hemophilia**

A condition characterized by impaired coagulation capability of the blood, and a strong tendency to bleed. The classic disease is hereditary, and limited to males, being transmitted always through the female to the second generation, but many similar conditions

attributable to the absence of different factors from the blood are now recognized.

### **hemoptysis**

Expectoration of blood or of blood-stained sputum.

### **hemorrhage**

The loss of blood from blood vessels and/or capillaries.

### **hemorrhoid**

An enlarged blood vessel in the anal or rectal wall that causes pain, itching, discomfort, and bleeding.

### **hemostasis**

The stoppage of blood flow or loss.

### **hemothorax**

A collection of blood in the pleural cavity.

### **hemotoxin**

Any substance that causes destruction of red blood cells.

### **henry (H)**

The inductance of a closed circuit in which a potential of one volt is produced when the electric current in the circuit is uniform at one ampere per second.

### **Henry's Law Constant**

Measure of the volatility of a substance in a dilute solution of water at equilibrium. It is the ratio of the vapor pressure exerted by a substance in the gas phase over a dilute aqueous solution of that substance to its concentration in the solution at a given temperature. For hazardous ranking system (HRS) purposes, use the value reported at or near 25°C [atmospheric-cubic meters per mol (atm<sup>3</sup>/mol)].

### **HEP**

See *human error probability*.

### **HEPA**

See *high-efficiency particulate air filter*.

### **Hepatitis B Virus (HBV)**

A virus that causes inflammation of the liver. Can also occasionally be caused by toxic agents other than viral.

### **hepatotoxic**

Refers to an agent that produces damage to the liver.

**Heptachlor**

An insecticide that was banned in some food products in 1975 and all of them in 1978. It was allowed for use in seed treatment until 1983. More recently it was found in milk and other dairy products in Arkansas and Missouri, as a result of illegally feeding treated seed to dairy cattle.

**herb**

A plant which may be used as food flavoring or for medicinal purposes.

**herbicide**

A chemical pesticide designed to control or destroy plants, weeds, or grasses.

**herbivore**

An animal that feeds on plants.

**here she comes**

Term used when another boat appears around a bend.

**hereditary mutagenicity**

The ability of a chemical to cause an inheritable change in the genetic material (i.e., DNA) or organisms.

**heredity**

The transmission of characteristics from parent to offspring.

**Hering opponent process theory**

See *opponent process theory*.

**hermetically sealed**

Closed by fusion, gasketing, crimping, or equivalent means so that no gas or vapor can enter or escape.

**hernia**

A failure/rupture or weakness in the wall of a bodily structure, usually a rupture of the abdominal wall or an intervertebral disk which results in the protrusion of part of an organ or tissue through the failure.

**herniate**

The creation of a hernia.

**herniated disk**

A protrusion of the nucleus pulposus of an intervertebral disk into or through the annulus. Commonly referred to as a *slipped disk*.

**heroin**

Narcotic drug which is a derivative of opium and whose technical name is diacetylmorphine. It is classified as a Class A substance for criminal purposes and the penalty

for its unlawful manufacture, distribution, sale, or possession is severe.

**Hertz (Hz)**

(1) A measure of frequency in cycles per second (cps). (2) The standard radio equivalent of frequency in cycles per second of an electromagnetic wave. Kilohertz (kHz) is a frequency of one thousand cycles per second. Megahertz (mHz) is a frequency of one million cycles per second.

**hetero-**

(*prefix*) Relating to combinations of different entities.

**heterochromatic**

Combining or pertaining to two or more different colors.

**heterochromatic flicker photometry**

A technique used for measuring an observer's relative sensitivity to light of different wavelengths by comparing a fixed-luminance reference light alternating with a light of a different wavelength to minimize the sensation of flicker.

**heteromodal**

See *multisensory*.

**heterophoria**

A tendency to position the eyes such that binocular vision cannot be used.

**heterosphere**

The region of the atmosphere above about 85 km where the composition of the air varies with height.

**heterotroph**

An organism that must obtain food energy by ingesting other organic material.

**heuristic**

Pertaining to a learning or problem-solving technique which uses certain empirical rules or guidelines to ultimately reach a solution.

**heuristic program**

A set of instructions which directs a computer to use a heuristic approach to problem solving.

**hexadecimal**

Pertaining to a numbering system based on 16, using the alphanumeric zero through nine and A through F.

**HHC**

See *highly hazardous chemical*.

**HIC**

See *Head Injury Criterion*.

**hiccup**

Spasmodic involuntary contraction of the diaphragm that results in uncontrolled breathing in of air. The peculiar noise of hiccoughs is produced by the attempt to inhale while the air passages are partially closed. Also called *singultus* and *hiccup*.

**Hick-Hyman Law**

A rule that the choice reaction time is linearly related to the logarithmic transformation of the amount of stimulus information presented. Represented as follows:

$$CRT = d + t_b H$$

where:

- $CRT$  = average choice reaction time  
 $d$  = summed time required for all non-decision-making activities, e.g., stimulus transmission time plus motor response time, assumed to be a constant  
 $t_b$  = time required to process one bit of information, assumed to be a constant  
 $H$  = amount of information in bits (=log<sub>2</sub>N), often taken as the number of available choices.

**hidden digit test**

See *Stilling test*.

**hidden line**

A graphic line not displayed on a model, especially a wire-frame model, which would not be visible from a particular view if the model were solid.

**hidden window**

A display window partially or completely covered by another.

**hierarchical decomposition**

The breakdown of a high-level task into smaller, lower level steps.

**hierarchical menu**

A menu structure or format in which each item on a given menu has another menu consisting of a subset of additional selections until the lowest level menu is reached.

**high**

(1) A general feeling of euphoria produced most commonly by artificial means, such as with drugs or other influencing substances. However, certain naturally occurring influencing factors, such as exercise and laughter, have also been reported to produce a similar feeling presumably due to a release of endorphins. (2) A meteorological phenomenon. See *anticyclone*.

**high blood pressure**

A disorder of the circulatory system marked by excessive pressure of the blood against the walls of the arteries. See also *hypertension*.

**high boiling aromatic oils (HBAO)**

These are high boiling components produced during catalytic cracking and thermal cracking of petroleum streams, and also during the extraction of lube base stocks. They contain complex mixtures of hydrocarbons in the boiling range of 500-1000°F and have demonstrated carcinogenic potential in animal testing. These are also referred to as *aromatic process oils*.

**high-definition television (HDTV)**

A video medium with a resolution of approximately 1200 lines.

**high degree of care**

See *reasonable care*.

**high density lipoprotein (HDL)**

A substance present in blood which functions to return cholesterol to the liver for reprocessing and elimination. Often referred to as the "good cholesterol" because of its ability to reduce overall cholesterol levels of the blood. It is assumed that the higher the HDL level, the healthier the outlook.

**high-density polyethylene**

A material that produces toxic fumes when burned. Used to make plastic bottles and other products.

**high-efficiency particulate air (HEPA) filter**

A filter capable of removing 99.97% of all particles with a mean aerodynamic diameter of 0.3 micron. Often used to filter air in air-purifying respirators, vacuum systems, exhaust systems, and fans.

**high-energy heavy ion (HZE)**

A high-velocity particle consisting of an ionized heavy atom.

**high fidelity**

Pertaining to an audio or graphic (including photographic) reproduction which is comparable with the original.

**high frequency**

The frequency band between 3 and 30 mHz.

**high frequency communications**

High radio frequencies (HF) between 3 and 30 mHz used for air-to-ground voice communication in overseas operations.

**high frequency loss**

In acoustics, refers to the hearing loss in frequency bands of 2000 Hz and above. Also referred to as *high frequency hearing loss*.

**high-hazard contents**

Those contents which are liable to burn with extreme rapidity or from which poisonous fumes or explosions are to be feared in the event of fire.

**high inversion fog**

A fog that lifts above the surface but does not completely dissipate because of a strong inversion (usually subsidence) that exists above the fog layer.

**high-level oversight structure**

With regard to regulatory compliance, full support by a company's board of directors and senior management of the company's compliance program.

**high-level radioactive waste (HLW)**

Under the Federal Nuclear Waste Policy of 1982: The aqueous waste resulting from the operation of the first cycle solvent extraction system, or equivalent, and the concentrated waste from subsequent extraction cycles, or equivalent, in a facility for reprocessing irradiated reactor fuels, or irradiated fuel from nuclear power reactors. Includes liquid waste produced directly in reprocessing and any solid material derived from such liquid waste that contains fission products in sufficient concentrations.

**high-mileage households**

Households with estimated aggregate annual vehicle mileage that exceeds 12,500 miles.

**high occupancy vehicle (HOV)**

Vehicles that can carry two or more persons. Examples of high occupancy vehicles are buses, vanpools, and carpools.

**high occupancy vehicle (HOV) lane**

An exclusive road or traffic lane limited to buses, vanpools, carpools, and emergency vehicles.

**high-order detonation**

See *detonation*.

**high-speed cinematography**

The sampling of activities using motion picture film with a frame rate much higher than the normal projection rate.

**high-speed rail**

(1) A rail service having the characteristics of intercity rail service which operates primarily on a dedicated guideway or track not used, for the most part, by freight, including, but not limited to, trains on welded rail, magnetically levitated (MAGLEV) vehicles on a special guideway, or other advanced technology vehicles designed to travel at speeds in excess of those possible on other types of railroads. (2) A rail transportation system with exclusive right-of-way which serves densely traveled corridors at speeds of 124 miles per hour and greater.

**high-speed taxiway**

A long radius taxiway designed and provided with lighting or marking to define the path of aircraft, traveling at high speed (up to 60 knots), from the runway center to a point on the center of a taxiway. Also referred to as long radius exit or turn-off taxiway. The high speed taxiway is designed to expedite aircraft turning off the runway after landing, thus reducing runway occupancy time.

**high task**

See *incentive pace*.

**high type road surface**

Highly flexible, composite, rigid, etc. (Surface/Pavement Type Codes 61, 62, 71-76 and 80).

**high volume air sampler**

Sampling device used for the collection of particulates in the ambient air. One type is employed for collecting PM 10 (particulate materials equal to or less than 10 micrometers in diameter), and another for collecting all

suspended particulates to determine the total suspended particulate concentration.

**high volume area**

*Maritime Emergency Response.* Area where an oil pipeline having a nominal outside diameter of 20 inches or more crosses a major river or other navigable waters which, because of the velocity of the river flow and vessel traffic on the river, would require a more rapid response in case of a worst case discharge or substantial threat of such a discharge from the oil pipeline.

**high water buoy**

Small unlighted buoys permanently secured to the end of dikes, lock walls, bear traps, and other river front structures such as mooring cells for the purpose of marking them during high water when they are submerged.

**high water station**

The location to which lights or buoys are moved when a river is at or near its flood stage, the purpose being a) to guide navigation in the high water and b) to locate the light in a position of security against loss.

**highest degree of care**

That degree of care that a very careful and prudent person would use under the same or similar circumstances. *See also [great care and care](#).*

**highlight**

Use some feature different from the background to attract a user's attention to some portion of a display.

**highly hazardous chemical**

Chemicals listed in Appendix A of the OSHA standard related to process safety management of highly hazardous chemicals (OSHA 29 CFR 1910.119). They are substances possessing toxic, reactive, flammable, or explosive properties.

**highly volatile liquid**

A hazardous liquid which will form a vapor cloud when released to the atmosphere and which has a vapor pressure exceeding 276 kPa (40 psia) at 37.8°C (100°F). *See also [hazardous material](#).*

**highpass filter**

A device which allows frequencies higher than the cutoff frequency to exit from the device unattenuated, while the intensity of fre-

quencies lower than the cutoff frequency is attenuated.

**highway**

(1) Any public street, public alley, or public road. (2) Any road, street, parkway, or free-way/expressway that includes rights-of-way, bridges, railroad-highway crossings, tunnels, drainage structures, signs, guardrail, and protective structures in connection with highways. The highway further includes that portion of any interstate or international bridge or tunnel and the approaches thereto (23 U.S.C. 101a).

**highway capacity manual**

A publication of the Institute of Transportation Engineers defining level of service criteria to determine peak hour traffic congestion.

**highway construction project**

A project financed in whole or in part with federal-aid or federal funds for the construction, reconstruction or improvement of a highway or portions thereof, including bridges and tunnels.

**highway mode**

Consists of public roads and streets, automobiles, vans, trucks, motorcycles, and buses (except local transit buses) operated by transportation companies, other businesses, governments, and households, garages, truck terminals, and other facilities for motor vehicles.

**Highway Performance Monitoring System (HPMS)**

The state/federal system used by the FHWA to provide information on the extent and physical condition of the nation's highway system, its use, performance, and needs. The system includes an inventory of the nation's highways including traffic volumes.

**highway-rail crossing**

A location where one or more railroad tracks intersect a public or private thoroughfare, a sidewalk, or a pathway. *See also [at grade](#) and [grade crossings](#).*

**highway-rail crossing accident/incident**

An impact between on-track railroad equipment and a highway user (e.g., an automobile, bus, truck, motorcycle, bicycle, farm vehicle, pedestrian, or other highway user) at a designated crossing site. Sidewalks, pathways, shoulders, and ditches associated with the



crossing are considered to be part of the crossing site. The term "highway user" includes pedestrians, cyclists, and all other modes of surface transportation.

**Highway Research Information Service (HRIS)**

A computer-based information storage and retrieval system developed by the Transportation Research Board with financial support from the state highway and transportation departments and the Federal Highway Administration. It consists of summaries of research projects in progress and abstracts of published works.

**highway trust fund**

The federal account established by law to hold receipts collected by the government and earmarked for highway programs and a portion of the federal mass transit program. It is supported by the federal gasoline tax and other user taxes.

**highway user fee or tax**

A charge levied on persons or organizations based on the use of public roads. Funds collected are usually applied toward highway construction, reconstruction, and maintenance. Examples include vehicle registration fees, fuel taxes, and weight-distance taxes.

**hinge joint**

The type of joint which permits only a single degree of freedom, as rotation about a pivot point within a plane. In anatomy, the elbow and knee are examples of a hinge joint.

**hip**

The coxal bone, its joints with the sacrum and femurs, and all the associated surrounding tissues.

**hip bone**

*See coxal bone.*

**hip breadth, sitting**

The maximum horizontal linear distance across the widest portion of the hips. Measured with the individual sitting erect, knees flexed at 90°, knees and thighs together, and feet flat on the floor.

**hip breadth, standing**

The maximum horizontal linear distance across the lower torso in the hip region. Measured with the individual standing erect,

feet together, and his/her weight distributed evenly on both feet.

**hip circumference at trochanterion**

The surface distance around the hip at the trochanteric height. Measured with the individual standing erect and his/her weight equally distributed on both feet.

**hip circumference, sitting**

*See buttock circumference, sitting.*

**hip circumference, standing**

*See buttock circumference.*

**hip joint**

The joint composed of the junction of the femur head and the coxal bone.

**Hippocrates**

The late 5th century B.C. "Father of Medicine." The son of a priest-physician, he was born on the island of Cos. By stressing that there is a natural cause for disease, he did much to dissociate the care of the sick from the influence of magic and superstition. His carefully kept records of treatment and solicitous observation of the ill provided a foundation for clinical medicine in the case report; and by also reporting unsuccessful methods of treatment, he anticipated the modern scientific attitude. A moral code for medicine has been established by his ideals of ethical conduct and practice as embodied in the Hippocratic Oath.

**hiring at will**

A general or indefinite hiring with the right to terminate such at the will of the employer.

**histamine**

A substance produced by the breakdown of histidine, a common amino acid derived from protein that occurs naturally in the body. Histamine is found in all tissues of the body. Although histamine was discovered in 1909, its role is still not fully understood. Histamine normally functions as a stimulant to the production of gastric juice. It also dilates the small blood vessels, as part of the regular adaptation of the body to changing inner and exterior conditions. An excess of histamine can dilate blood vessels to the extent that extravasation occurs. This appears as the reddening and swelling known as inflammation. Continued extravasation causes edema.

**histidine**

A naturally occurring amino acid, essential for optimal growth of infants.

**histogram**

A graphical representation of two or more amplitude measures using rectangular shapes along either a discrete or continuous dimension. More commonly referred to as a bar graph or bar chart.

**histology**

The study of the structure of tissues.

**histolysis**

Process whereby tissue is broken down.

**histopathology**

Pathologic histology or the change in the function of tissues as a result of a disease.

**histoplasmosis**

Bacterial infection resulting from the inhalation of the spores of *Histoplasma Capsulatum*. Occupations at risk are those associated with the raising and processing of fowl.

**historic site**

Any building, structure, area, or property that is significant in the history, architecture, archeology or culture of a state, its communities, or the nation and has been so designated pursuant to a statute. Such structures or properties are commonly statutorily protected and cannot be altered without permission of the appropriate authorities.

**historical data**

That data which have been previously collected in a given work situation and serve as a standard reference for performance. Typically refers to historical time, but not necessarily restricted to that.

**histotoxic hypoxia**

An inability of the tissues to use oxygen, even though it is present in amounts equal to or greater than normal.

**hit and run**

A hit-and-run occurs when a motor vehicle in transport, or its driver, departs from the scene after being involved in a crash prior to police arriving on the scene. Fleeing pedestrians and motor vehicles not in transport are excluded from the definition. It does not matter

whether the hit-and-run vehicle was striking or struck. *See also crash.*

**HIV**

*See human immune deficiency virus.* Also called human immunodeficiency virus.

**HIWAS**

*See Hazardous In-flight Weather Advisory Service.*

**HLSC**

*See human life cycle safe concentration.*

**HLW**

*See high-level radioactive waste.*

**HMD**

*See head-mounted display and/or helmet-mounted display.*

**HMI**

*See human-machine interface.*

**HMTA**

*See Hazardous Materials Transportation Act of 1974.*

**hoarfrost**

*See frost.*

**hobo**

*Transit (slang).* A tractor that is shifted from terminal to terminal.

**Hodgkin's disease**

A painless, progressive, and fatal condition characterized by pruritus and enlargement of the lymph nodes, spleens, and lymphoid tissue generally, which often begins in the neck and spreads through the body. Although Hodgkin's disease can occur at any age, it affects primarily those between the ages of 20 and 40 and is almost twice as frequent among men as among women. The first sign of the disease is often swelling of the lymph nodes, usually those of the neck, armpit, or groin, but sometimes those lying deep within the chest or abdomen. Severe itching is often an early sign of the disorder. As the disease progresses, it is usually marked by sweating, weakness, fever, and loss of weight and appetite. It spreads through the lymphatic system, involving other lymph nodes elsewhere in the body as well as the spleen, liver, and bone marrow. The lymph nodes and the spleen and liver may swell, and by obstructing other organs may cause coughing, breathlessness, or

enlargement of the abdomen. The patient often becomes anemic, and because of blood changes the body becomes less able to combat infections. Also called *malignant granuloma* and *lymphogranuloma*.

**hoist angle**

An angle at which the load line is pulled during a hoisting operation.

**hoistway**

Any shaftway, hatchway, well hole, or other vertical opening or space in which an elevator or dumbwaiter is designed to operate.

**hold**

A therblig; a work element in which an object is held in a fixed orientation and location by the hand or other body member.

**hold for release**

*Aviation.* Communication Protocol. Used by Air Traffic Control (ATC) to delay an aircraft for traffic management reasons, i.e., weather, traffic volume, etc. Hold for release instructions (including departure delay information) are used to inform a pilot or a controller (either directly or through an authorized relay) that an Instrument Flight Rules (IFR) departure clearance is not valid until a release time or additional instructions have been received.

**hold harmless agreement**

A contractual arrangement whereby one party assumes the liability inherent in a situation, thereby relieving the other party of responsibility. *See also indemnification agreement.*

**hold open**

*Maritime Navigation.* To hold below or above an object (i.e., wide of the mark) being steered on, depending on direction. Upstream tows normally hold above, downstream tows below, the object.

**holdfire**

An interruption of the ignition circuit of a launch vehicle.

**holding agency**

A federal agency having accountability for motor vehicles owned by the government. This term applies when a federal agency has authority to take possession of, assign, or reassign motor vehicles regardless of which agency is using the motor vehicles.

**holding mark**

*Maritime Navigation.* An object, usually an aid to navigation, on which the pilot of a tow will steer.

**holding on**

Steering steadily on a mark or object.

**holding pond**

A pond or reservoir, usually made of earth, built to store polluted runoff.

**Holocene**

The most recent geologic era; from approximately 10,000 years ago to the present. The Holocene is the latest epoch of the *Quaternary period*.

**homatropine**

A chemical which dilates the pupil and paralyzes accommodation when applied to the eye surface. Usually applied during an eye examination to permit viewing of the eyeball interior.

**home base**

The location where a vehicle is usually parked when not in use or on the road.

**home row**

The row of letters in a typewriter or computer keyboard on which the fingertips normally rest when typing in a standard mode.

**home rule**

A legal doctrine (usually found in a state constitution) whereby municipalities such as cities and towns are authorized to enact legislation in the form of *bylaws* or *ordinances* on certain subjects which the state legislation could authorize them to do, without the need to wait for an *Enabling Act* or other state approval. In some states, municipalities have been granted home rule authority to varying degrees over financial affairs, taxation, and exercise of the police power.

**home signal**

A roadway signal at the entrance to a route or block to govern trains in entering and using that route or block.

**homeostasis**

A state of physiologic equilibrium within the body.

**homeothermy**

The ability of some species to regulate body temperature within narrow limits, despite large temperature fluctuations in the environ-

ment. Commonly referred to as *warm-blooded*.

**homesickness**

A strong desire to be home such that one becomes sluggish and performance is affected, with possible psychosomatic or other symptoms if prolonged.

**homicide**

The killing of one human being by the act, procurement, or omission of another. A person is guilty of criminal homicide if he/she purposely, knowingly, recklessly, or negligently causes the death of another human being.

**homing**

The procedure of using the direction finding equipment of one radio station with the emission of another radio station, where at least one of the stations is mobile, and whereby the mobile station proceeds continuously toward the other station.

**homogeneous exposure group (HEG)**

A group of employees who experience exposures similar enough so that monitoring the exposure of any of the group will provide exposure data that are useful for predicting the exposures of the remainder of the group.

**homogeneous menu hierarchy**

A menu hierarchy having the same number of options in each menu.

**homogeneous radiation**

A beam or flux consisting of radiation of the same kind and energy.

**homogeneous reactor**

A nuclear reactor in which the fissionable material and the moderator (if used) are combined in a mixture such that an effectively homogeneous medium is presented to the neutron.

**homograph**

A word which is spelled the same as another, but which has a different origin, pronunciation, and/or meaning.

**homologous**

Having the same structural relationship.

**homologous motion**

A movement which can be achieved in more than one way.

**homoscedasticity**

A condition in which each distribution has the same variance.

**homosphere**

The region of the atmosphere below about 85 km where the composition of the air remains fairly constant.

**homunculus**

A representation of the human body mapped onto the surface of the brain cortex. *See also sensory homunculus and motor homunculus.*

**HON**

Hazardous Organic NESHAP. *See also NESHAPS.*

**hood**

A shaped inlet designed to capture contaminated air and conduct it into an exhaust duct and/or exhaust fan.

**hood capture efficiency**

The emissions from a process which are captured by a hood and directed into the control device, expressed as a percent of all emissions.

**hood entry loss**

The pressure loss from turbulence and friction as air enters a ventilation system hood.

**hood lifter**

*Transit (slang).* A garage mechanic.

**hood static pressure**

The static pressure near a hood in the duct serving the hood; measured static pressure about 2-5 duct diameters downstream in the duct near a hood. It represents the suction that is available to draw air into the hood.

**hook**

A point within software at which additional steps or code can be easily added at a later time.

**hook grip**

A type of grip where only the fingers flex around an object, with the thumb not being used.

**hookworm**

A parasitic worm that infests people and causes debilitation. Major infestations can cause anemia and retardation of mental and physical development. Adult hookworms feed on blood and tissue from the wall of the intestine. Eggs pass out in the feces, undergo

a period of development in soil, and the larvae enter a new host by burrowing through the skin, usually through the sole of the foot. The first sign of the disease may appear on the skin as small eruptions that develop into pus-filled blisters; this condition is sometimes called *ground itch*. Meanwhile, the hookworms enter blood vessels and are carried by the blood into the lungs. They leave the lungs, propel themselves up the trachea, are swallowed and washed through the stomach and end up in the intestines. Here, if left alone, they will make a permanent home, using their host's body as a source of nourishment. By the time they reach the intestines, about 6 weeks after they enter the body as larvae, the worms are full-grown adults. Each worm now attaches itself by its host's blood by contraction and expansion of its gullet. If large number of worms are present, they can cause considerable loss of blood and severe anemia. The symptoms include pallor and loss of energy while the appetite may increase. The thousands of eggs laid every day by each female worm pass out of the body in the stool, in which they can easily be seen. If the stool is not properly disposed of, the larvae that hatch from the eggs may infect other persons.

**hopper**

A top-loading, funnel-shaped structure for temporary storage of loose materials, which will be dispensed from the bottom.

**hopper barge**

An open-compartment barge used for dry bulk cargo that does not require protection from the weather.

**hopper body**

Truck body capable of discharging its load through a bottom opening without tilting.

**horizon**

The apparent boundary line between the earth's surface and the sky.

**horizontal axis of Helmholtz**

The horizontal axis connecting the centers of rotation of the two eyes.

**horizontal disparity**

See *binocular disparity*.

**horizontal fault**

*Seismology*. A fault with no dip. Still theoretical, this sort of fault should only exist within a region of strong compression or extension where the tectonic forces required for such movement could be present.

**horizontal job enlargement**

See *job enlargement*.

**horizontal leg room**

See *knee well width and knee well depth*.

**horizontal plane**

Any plane parallel to the floor, ground, or other reference surface.

**horizontal scroll**

Move the cursor sufficiently to the left or right under operator control such that the display changes to present information not visible before.

**horizontal standard**

An OSHA standard that essentially has application across a number of different industries, such as the Hazard Communication Standard and other General Industry Standards.

**hormone**

A chemical substance found in one organ or part of the body and carried in the blood to another part. Hormones can alter the function and sometimes the structure of one or more organs. Hormones act as chemical messengers to body organs, stimulating certain life processes and retarding others. Growth, reproduction, sexual attributes, and even mental conditions and personality traits are dependent on hormones. Hormones are produced by various organs and body tissues, but mainly by the endocrine glands (such as the pituitary and gonads).

**Horner's syndrome**

Sinking in of the eyeball, ptosis of the upper eyelid, slight elevation of the lower lid, constriction of the pupil, narrowing of the palpebral fissure and anhidrosis caused by paralysis of the cervical sympathetic nerve supply.

**horology**

The study of time measurement, including the principles and technologies involved in the time-measuring devices.

**horopter**

The locus of points in space which produce images falling on the corresponding points of

both eyes with a constant amount of convergence such that a single image is seen.

**horse**

*Transit (slang).* A tractor or power unit.

**horse latitudes**

The belt of latitude at about 30° to 35° where winds are predominantly light and weather is hot and dry.

**horse light**

Spotlight mounted on cab to reveal open-range livestock.

**horse scaffold**

A scaffold for light or medium duty, composed of wooden or metal horses supporting a work platform.

**horse van body**

Truck designed for the transportation of valuable horses (livestock).

**horsepower (hp)**

(1) A unit of measure of work done by a machine equal to 745.7 watts or 33,000 foot-pounds per minute. (2) The amount of work that an engine can perform within a given time.

**hose mask**

Respiratory protective device that supplies air to the wearer from an uncontaminated source through a hose that is connected to the facepiece.

**host**

(1) In genetics, an organism, simple or complex and including humans, that is capable of being infected by a specific agent. (2) In medicine, an animal infected by another organism.

**host factors**

The personal characteristics of individuals who harbor or nourish a parasite.

**hostility**

An outwardly directed expression of anger, animosity, or antagonism toward another entity.

**hot-deck imputation**

A statistical procedure for deriving a probable response to a questionnaire item concerning a household or vehicle, where no response was given during the survey. To perform the pro-

cedure, the households or vehicles are sorted by variables related to the missing item. Thus, a series of "sort categories" are formed, which are internally homogeneous with respect to the sort variables. Within each category, households or vehicles for which the questionnaire item is not missing are randomly selected to serve as "donors" to supply values for the missing item of "recipient" households or vehicles.

**hot flow**

A flow of a hazardous commodity in a newly assembled system to normally passivate system walls and components and to remove residual, nonactive contaminants or flushing fluid. The hot flow is not intended for leak checks because of the potential hazards due to leaks.

**hot lines**

A confidential telephone service used by employees or agents of an organization for internal or external reporting of law or corporate policy. It may be in-house or an outside service. *See self-reporting system.*

**hot load**

*Transit (slang).* A rush shipment of cargo.

**hot-wire anemometer**

A device, also known as a *thermal anemometer*, used to measure air velocity by the cooling effect of moving air over a heated element.





*Welding is just one example of "hot work"*

**hot work**

Mechanical or other work that involves a source of heat, sparks, or other source of ignition that is sufficient to cause ignition of a flammable material. Work involving sources of ignition or temperatures high enough to cause the ignition of a flammable mixture. Examples include welding, burning, soldering, use of power tools, operating engines, sandblasting, electric hot plates, explosives, open fires, portable electrical equipment which has not been tested and classified as intrinsically safe, and other sources of ignition.

**hot work permit**

The employer's written authorization to perform operations (for example, riveting, welding, cutting, burning, and heating) capable of providing a source of ignition.

**hour**

A unit of time, corresponding to 1/24 of the time required for the earth to rotate about its axis.

**household**

A group of persons whose usual place of residence is a specific housing unit; these persons may or may not be related to each other. The total of all U.S. households represents the total civilian noninstitutionalized population. Does not include group quarters (i.e., 10 or

more persons living together, none of whom are related).

**household trip**

One or more household members traveling together.

**household vehicle**

A motorized vehicle that is owned, leased, rented or company owned and available to be used regularly by household members during the travel period. Includes vehicles used solely for business purposes or business-owned vehicles if kept at home and used for the home to work trip (e.g., taxicabs, police cars, etc.) which may be owned by, or assigned to, household members for their regular use. Includes all vehicles that were owned or available for use by members of the household during the travel period even though a vehicle may have been sold before the interview. Excludes vehicles that were not working and not expected to be working within 60 days, and vehicles that were purchased or received after the designated travel day.

**housekeeping**

The maintenance of the orderliness and cleanliness of an area or facility.

**housing unit**

A house, apartment, a group of rooms, or a single room occupied or intended for occupancy as separate living quarters. Separate living quarters are those in which the occupants do not live and eat with any other persons in the structure and which have either a) direct access from the outside of the building or through a common hallway intended to be used by the occupants of another unit or by the general public, or b) complete kitchen facilities for the exclusive use of the occupants. The occupants may be a single family, one person living alone, two or more families living together, or any other group of related or unrelated persons who share living arrangements.

**HOV**

*See [high occupancy vehicle](#).*

**hover check**

Used to describe when a helicopter/vertical takeoff and landing (VTOL) aircraft requires a stabilized hover to conduct a performance/power check prior to hover taxi, air taxi,

or takeoff. Altitude of the hover will vary based on the purpose of the check.

**hover taxi**

Used to describe a helicopter/vertical takeoff and landing (VTOL) aircraft movement conducted above the surface and in ground effect at airspeeds less than approximately 20 knots. The actual height may vary, and some helicopters may require hover taxi more than 26 feet above ground level (AGL) to reduce ground effect turbulence or provide clearance for cargo slingloads.

**how do you hear me?**

*Aviation.* Communication Protocol. A question relating to the quality of the transmission or to determine how well the transmission is being received.

**hp**

See *horsepower*.

**HP**

See *health physics*.

**HPD**

See *hearing protective device*.

**HPLC**

High performance liquid chromatography.

**HPMS**

See *Highway Performance Monitoring System*.

**HPS**

See *Health Physics Society*.

**HRI**

Hazard risk index. See *risk assessment code*.

**HRIS**

See *Highway Research Information Service*.

**HRS**

See *hazardous ranking system*.

**HS**

See *hydrogen sulfide*.

**HSI**

Heat stress index. See *Belding-Hatch heat stress index*.

**HSWA**

See *Hazardous and Solid Waste Amendments of 1984*.

**html**

*Computing.* See *hypertext markup language*.

**http**

*Computing.* Acronym for *hypertext transfer protocol*.

**HUD**

(1) Department of Housing and Urban Development (United States). (2) See *head-up display*.

**hue**

A perceptual attribute of color determined primarily by the wavelength of the light entering the eye.

**hue composition (H<sub>c</sub>)**

An expression of hue as percentages of the components.

**hue contrast**

See *chromatic contrast*.

**hull inspector**

*Maritime Navigation (slang).* Colloquial river term for any large piece of drift or submerged piling, log, rock, etc.

**human-computer dialogue**

The interchange of data, commands, or information in those activities between a human and computer.

**human-computer interaction**

The total of the relationship and activities occurring between a human operator and a computer or terminal.

**human-computer interface (HCI)**

The total of the relationship and activities occurring between a human operator and a computer or terminal. Also referred to as *man-computer interface*, *user-computer interface*, *computer-human interface (CHI)*.

**human describing function**

See *human transfer function*.

**human ecology**

The study of the relationships of individuals with each other and with their community's environment.

**human engineering**

See *human factors engineering*.

**human-environment interface**

Any region of contact between man and his surroundings.

**human error**

The end result of multiple factors which influence human performance in a given situation.

An often overused causal factor finding which, by itself, is not entirely descriptive of a true accident cause. Human error is considered more a symptom than a cause. *See also human factor.*

**human error probability (HEP)**

A measure of the likelihood of occurrence of a human error under special conditions:

$$HEP = \text{error count/number of possibilities}$$

**human factor**

Any one of a number of underlying circumstances or conditions which directly or indirectly affect human performance. These include physical as well as psychological factors that can potentially lead a person to make an error in judgment or action (human error) resulting in an accident. *See also ergonomics.*

**human factors analysis**

A systematic study of those elements involving a human-machine interface or other situation with the intent of improving working conditions, operations, or an individual's well-being. Also referred to as *ergonomic analysis*.

**human factors engineer**

One who has the appropriate education, training, and experience to be capable of properly performing human factors engineering activities.

**human factors engineering**

The use of information derived from human factors research, theory, and modeling for the specification, design, development, testing, analysis, and evaluation of products or systems for human use. *See also ergonomics.*

**human factors specialist**

An individual who has the necessary educational, training, and experimental background to have a working understanding of human factors principles and is capable of research or other work toward achieving human factors goals.

**human immune deficiency virus (HIV)**

Also called the human "immunodeficiency" virus, HIV is the virus that causes acquired immune deficiency syndrome (AIDS).

**human life cycle safe concentration (HLSC)**

The highest concentration of a substance which will not cause an adverse effect when humans are exposed continuously over their life times.

**human-machine interface (HMI)**

Any region or point at which a person interacts with a machine.

**human-machine system**

A system in which the functions of both man and machine are interrelated, both being necessary for proper system operation.

**human modeling**

The use of any system which is capable of modeling one or more human structures or other characteristics for education, research, or engineering purposes.

**human operator**

An individual who is involved in the routine control, function, or support of a system or subsystem, but is specifically not involved in any maintenance on that system.

**human performance**

- (1) The degree to which an individual's skill or ability is implemented in a specific task.
- (2) Any result from the measurement of human activity under specified conditions.

**human performance technology**

The use of people, systems, and/or programs to influence behavior and accomplishment.

**human reliability**

The probability that an individual or group will adequately perform a given task at the appropriate time.

**human resources engineering**

The process of using human skill resources as factors in design tradeoffs.

**human tolerance**

The ability of the human body and/or psyche to withstand physical and/or mental stresses without permanent injury or damage.

**human transfer function**

A mathematical description of what output(s) the human operator would produce as a function of specific input(s).

**humane**

Under the Federal Mammal Protection Act of 1972: In the context of taking a marine mammal, means that method of taking which involves the least possible degree of pain and suffering practicable to the mammal involved.

**Humanscale**

A manual modeling system for estimating body link, strength, postures, and other aspects for use in human factors engineering.

**humectant**

Any chemical which absorbs and helps retain moisture.

**humeral breadth**

See *elbow breadth*.

**humerus**

The bone in the upper arm, extending from shoulder to elbow. It consists of a shaft and two enlarged extremities. The proximal end has a smooth round head that articulates with the scapula to form the shoulder joint. Just below the head are two rounded processes called the greater and lesser tubercles. Just below the tubercles is the surgical neck, so named because of its liability to fracture. The distal end of the humerus has two articulating surfaces: the trochlea, which articulates with the ulna, and the capitulum, which articulates with the radius.

**humidify**

Increase the water vapor content of the atmosphere.

**humidistat**

A device for measuring and/or controlling humidity levels.

**humidity**

The amount of moistness or dampness in the air. See also *relative humidity*.

**humiture**

An index that relates air temperature and relative humidity to how hot it feels.

**humor**

Any fluid or semifluid in the body.

**humping**

*Rail Operations*. The process of connecting a moving rail car with a motionless rail car within a rail classification yard in order to

make up a train. The cars move by gravity from an incline or "hump" onto the appropriate track.

**humus**

Decomposed organic material.

**hunchback**

A rounded deformity, or hump, of the back, or a person with such a deformity. The condition is also called kyphosis and is the result of an abnormal backward curvature of the spine.

**hunger**

The feeling of a need for food to satisfy an empty feeling in the stomach.

**Hunter Lab color system**

A color ordering system which is defined from a simple relationship to the CIE X, Y, and Z tristimulus values and is specified by lightness (L), redness or greenness (a), and yellowness or blueness (b).

**Huntington's chorea**

A hereditary type of chorea which develops in adults and is accompanied by mental deterioration. Also referred to as *adult chorea*. See also *Sydenham's chorea*.

**hurdle**

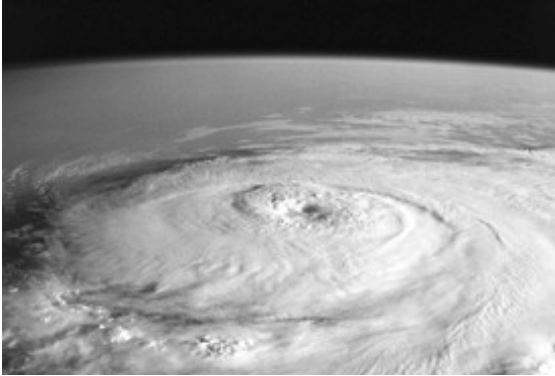
A colloquial term for a dike. See also *dike*.

**hurricane**

A severe tropical cyclone having winds in excess of 64 knots (74 mph). Such storms originate in warm tropical waters of the Atlantic Ocean, Caribbean Sea, or Gulf of Mexico and have circulation about their centers. According to the Saffir/Simpson Scale, there are five Categories of hurricanes which are dictated by sustained wind speeds, as follows:

<u>CATEGORY</u>	<u>WIND/MPH</u>
I	74 – 95 storm surge 4-5 feet above normal
II	96 – 110 storm surge 6-8 feet above normal
III	110 – 130 storm surge 9-12 feet above normal
IV	131 – 155 storm surge 13-18 feet above normal

storm surge greater than 18 feet above normal



*The tremendous power of a hurricane as seen from space*

### **HVAC**

An air handling system designed primarily for temperature, humidity, odor control, and air quality. See *heating, ventilation and air conditioning system*.

### **HVL**

See *half-value layer*.

### **hybrid**

A cell or organism resulting from a cross between two unlike plant or animal cells or organisms.

### **HYBRID**

One of a series of anthropomorphic dummies developed for use in automotive and aircraft crash testing.

### **HYBRID II**

An instrumented anthropomorphic dummy used in automobile head-on collision research.

### **HYBRID III**

An instrumented anthropomorphic dummy used in automobile head-on collision research. Also referred to as *Part 572 dummy*.

### **hybrid rulemaking**

A process of rulemaking that has elements of both formal and informal rulemaking procedures.

### **hybridoma**

A hybrid cell that produces monoclonal antibodies in large quantities.

### **hydrargyria**

Chronic mercury poisoning.

### **Hydraset**

The trade name for a closed circuit hydraulically operated instrument installed between a crane hook and load that allows precise control of lifting operations and provides an indication of applied load; a precision load positioning device.

### **hydration**

The process of absorbing or combining with water; the chemical addition of water to a compound.

### **hydraulic**

Operated by water or any other liquid under pressure, including all hazardous fluids as well as typical hydraulic fluids that are normally petroleum based.

### **hydraulic head**

The distance between the respective elevations of the upstream water surface (headwater) above and the downstream surface water (tailwater) below a hydroelectric power plant.

### **hydrocarbon**

A compound composed solely of the two elements hydrogen and carbon. The simplest and lightest forms of hydrocarbon are gaseous. With greater molecular weights, they are liquid, while the heaviest are solids.

### **hydrochloric acid (HCL)**

A normal constituent of gastric juice in man and other animals. The absence of free hydrochloric acid in the stomach, called achlorhydria, may be found with chronic gastritis, gastric carcinoma, pernicious anemia, pellagra, and alcoholism. This condition is also referred to as gastric acidity.

### **hydrodynamic element**

A modeling fluid which is governed by pressure and volume laws.

### **hydrogen**

A chemical element, atomic number 1, atomic weight 1.00797, symbol H.

### **hydrogen embrittlement**

A mechanical environmental failure process that results from the initial presence or absorption of excessive amounts of hydrogen in metals, usually in combination with residual or applied tensile stresses.

**hydrogen sulfide (HS)**

Gas emitted during organic decomposition. Also a byproduct of oil refining and burning. In heavy concentrations, HS can cause illness.

**hydrogenation**

The addition of hydrogen to a gaseous substance by the use of gaseous hydrogen combined with a catalyst.

**hydrogeology**

The geology of groundwater, with particular emphasis on the chemistry and movement of water.

**hydrologic cycle**

A model that illustrates the movement and exchange of water among the earth, atmosphere, and oceans.

**hydrology**

The study of the distribution and movement of water.

**hydrolysis**

The formation of an acid and a base from a salt by the ionic dissociation of water.

**hydrometer**

An instrument used for determining the specific gravity of liquids.

**hydrophobic**

The ability to resist the condensation of water vapor. Usually used to describe "water-repelling" condensation nuclei.

**hydrophylic**

Materials that absorb water which results in their swelling and forming reversible gels.

**hydrostatic equilibrium**

The state of the atmosphere when there is a balance between the vertical pressure gradient force and the downward pull of gravity.

**hydrostatic pressure**

Pressure created by water at rest equally at any point within a confined area.

**hydrostatic weighing**

A part of one technique for estimating body composition by weighing an individual completely submerged under water to determine body volume.

**hydrothermal**

The generic term that refers to any geologic process involving heated or superheated water.

**hygiene**

Refers to the science of health and the preservation of well-being (named for the Greek God Hygeia).

**hygrometer**

An instrument used for the detection of atmospheric moisture. The sensing part of the instrument can be hair (*hair hygrometer*), a plate coated with carbon (*electrical hygrometer*), or an infrared sensor (*infrared hygrometer*).

**hygrometry**

The determination of the water vapor content of the air.

**hygroscopic**

Refers to substances that absorb water from the atmosphere. Usually used to describe "water-seeking" condensation nuclei.

**hygrothermograph**

A recording instrument which provides a simultaneous reading of ambient temperature and humidity.

**hyoid bone**

A U-shaped bone in the neck which is connected by ligaments to the temporal bone and which supports the tongue. Unique in that it does not articulate directly with any other bone.

**hyper-**

(*prefix*) Greater than normal, excessive.

**hyperabduct**

To abduct a joint beyond the normal joint range of motion limits, with or without injury.

**hyperactivity**

A disorder characterized by prolonged generally excessive movement, but which may be voluntarily controlled. Also referred to as *hyperkinesia*, *hyperkinesia*, and *hyperkinetic syndrome*.

**hyperbaric**

Air pressure in excess of that at sea level.

**hyperbaric oxygen therapy**

A treatment using pure oxygen at greater than atmospheric pressures in a pressure chamber to treat decompression sickness, lesions or sores that resist healing, and other pathologies.



**hyperbarism**

A condition resulting from exposure to atmospheric pressure that exceeds the pressure within the body.

**hypercapnia**

An excessive amount of CO<sub>2</sub> in the blood.

**hyperemia**

An excess of blood in tissue, organ, or other part of the body.

**hyperextend**

To extend a joint beyond its normal range of motion or comfortable working limits, with or without injury.

**hyperflex**

To flex a joint beyond its normal range of motion or comfortable working limits, with or without injury.

**hypergolic**

Ignites spontaneously upon contact, such as certain rocket fuels and oxidizers.

**hyperkeratosis**

Hypertrophy of the horny layer of the skin.

**hyperkinesis**

See *hyperactivity*.

**hyperkinetic syndrome**

See *hyperactivity*.

**hypermetropia**

See *hyperopia*.

**hyperopia**

A refraction disorder in the eye in which the focal point of the parallel light rays from the distant object come to a focus posterior to the retina under relaxed accommodation. Commonly referred to as *farsightedness*.

**hyperoxia**

A condition in which the partial pressure of oxygen is greater than that found in a standard atmosphere.

**hyperparathyroidism**

Abnormally increased activity of the parathyroid glands, causing loss of calcium from the bones and excessive secretion of calcium and phosphorus by the kidney. Among the symptoms are kidney stones, back pain, joint pains, thirst, nausea, and vomiting. The conditions also makes bones more susceptible to fracture.

**hyperplasia**

The abnormal multiplication or increase in the number of normal cells in normal arrangement in tissue.

**hyperpnea**

An increased depth and rate of respiration.

**hypersensitivity**

A state of altered reactivity in which the body reacts to a foreign agent more strongly than normal; anaphylaxis and allergy are forms of hypersensitivity.

**hypersensitivity diseases**

Diseases characterized by allergic responses to animal antigens. The hypersensitivity diseases most clearly associated with indoor air quality are asthma, rhinitis, and hypersensitivity pneumonitis. Hypersensitivity pneumonitis is a rare but serious disease that involves progressive lung damage as long as there is exposure to the causative agent.

**hypersensitivity pneumonitis**

See *building-related illness*.

**hypersonic**

Traveling at or pertaining to a velocity equal to or greater than five times the velocity of sound.

**hypertension**

(1) A state in which an individual chronically maintains an arterial blood pressure higher than optimal levels, generally  $\geq 90$  mm Hg diastolic and/or  $\geq 140$  mm Hg systolic. (2) A state in which a muscle is overly tensed.

**hypertensive**

(1) Characterized by or causing increased tension or pressure, as abnormally high blood pressure. (2) A person with abnormally high blood pressure.

**hypertext markup language (html)**

A standard language for creating documents on the World Wide Web.

**hyperthermia**

A marked sustained increase in body temperature due to the inability of the body to dissipate excessive heat generated through metabolic activity that can result in severe cellular damage and death if not treated promptly.

**hyperthyroidism**

Excessive functional activity of the thyroid gland. The condition is called also *thyrotoxicosis*, and is often accompanied by *goiter*. Symptoms include profuse sweating, dislike of heat, palpitation, insomnia, nervousness, and excitability. The basal metabolic rate is increased. Sometimes there is diarrhea. There may also be bulging of the eyes, in which case the condition may be referred to as *exophthalmic goiter*, or *Grave's disease*.

**hypertonia**

Having an above normal muscle tension.

**hyperventilation**

Abnormally prolonged, rapid, and deep breathing. This results in reduced carbon dioxide in the blood (*acapnia*) and consequent apnea (intermittent cessation of breathing). Symptoms include faintness (or impaired consciousness without actual loss of consciousness).

**hyphenated point**

*Transportation*. Basically, two or more neighboring communities which, in terms of authorization shown in a carrier's Certificate of Public Convenience and Necessity, are treated as a single community.

**hypnotic**

Substance that induces sleep or sleepiness.

**hypo-**

(*prefix*) Less than normal.

**hypoallergenic**

Having a low probability of stimulating allergic reactions.

**hypobaric**

Air pressure below that which exists at sea level.

**hypocenter**

The point of origin of an earthquake. It can be expressed with no fewer than three measurements: latitude, longitude, and depth. Also known as the *focus*.

**hypochondriac**

(1) Pertaining to the hypochondrium. (2) A person affected with hypochondriasis.

**hypochondriasis**

An abnormal concern about one's health. The hypochondriac exaggerates trivial symptoms and often believes that he/she is suffering from some serious ailment. True hypochon-

driasis is a type of neurosis caused by an unresolved conflict in the person's unconscious mind.

**hypochondrium**

The abdominal region on either side, just below the thorax.

**hypodynamia**

The lack of gravitational loading on the skeleton.

**hypoglossal nerve**

A cranial nerve which regulates part of the motor activity of the tongue.

**hypoglycemia**

An abnormally low level of sugar (glucose) in the blood. The condition may result from an excessive rate of removal of glucose from the blood or from decreased secretion of glucose into the blood. Overproduction of insulin from the islands of Langerhans in the pancreas or an overdose of exogenous insulin can lead to increased utilization of glucose, so that glucose is removed from the blood at an accelerated rate.

**hypogravity**

A state in which a significantly reduced gravitational force is experienced, generally with reference to the accepted standard gravitational force of the earth at its surface.

**hypokinesia**

An abnormally reduced capacity for voluntary muscular movement while having full, normal consciousness.

**hypokinetic hypoxia**

A hypoxic condition due to the reduced flow of blood.

**hypoparathyroidism**

A disorder caused by underproduction of the parathyroid hormone. It most often occurs as a result of accidental removal of, or damage to, one or all of the parathyroids during thyroid surgery. Insufficiency of parathyroid hormone causes lowering of the calcium content of the blood and may result in tetany, of which most obvious sign is spasm of the muscles, especially those of the fingers and toes.

**hypoplasia**

The incomplete development of an organ so that it fails to reach adult size.

**hyposensitivity**

(1) Abnormally decreased sensitivity. (2) The specific or general ability to react to a specific allergen reduced by repeated and gradually increasing doses of the offending substance.

**hypotension**

Diminished tension; lowered blood pressure. A consistently low blood pressure with a systolic pressure less than 100 mm of mercury is no cause for concern. In fact, low blood pressure is associated with long life and an old age free of illness. An extremely low blood pressure is occasionally a symptom of a serious condition. Hypotension may be associated with Addison's disease and inadequate thyroid function, but in both cases the primary disease produces so many other symptoms that the hypotension is considered comparatively unimportant.

**hypotensive**

Condition in which there is a lack of oxygen supply to the tissues.

**hypothalamus**

The portion of the brain that controls body temperature and produces hormones that affect the pituitary gland.

**hypothernar**

Pertaining to the fleshy mass on the medial/ulnar side of the palm.

**hypothernar eminence**

The fleshy protrusion on the medial ulnar side of the palm.

**hypothermia**

Loss of body heat and decreased temperature due to extensive exposure to cold.

**hypothesis**

An assumption which may be accepted or rejected, based on experimental findings, such as by statistical tests of significance.

**hypothesis testing**

The conducting of a properly controlled experiment, including any supporting statistical analyses, to determine the likelihood of a hypothesis being true.

**hypothetical question**

A form of question framed in such a manner as to call for an opinion from an expert based on a series of assumptions claimed to have been established as fact by the evidence, and a ground for inferring guilt of innocence, as the case may be, or as indicating a probable or possible motive for the crime.

**hypothyroidism**

Deficiency of thyroid gland activity, with underproduction of thyroxine, or the condition resulting from it.

**hypotonia**

A condition involving decreased muscle tone.

**hypotonic**

(1) Having an abnormally reduced tonicity or tension. (2) Having an osmotic pressure lower than that of the solution with which it is compared.

**hypoventilation**

Decrease of air in the lungs below the normal amount.

**hypoxemia**

Deficient oxygenation of the blood.

**hypoxia**

A condition experienced by humans when the brain does not receive sufficient oxygen. Anemic hypoxia is the reduction of the oxygen-carrying capacity of the blood as a result of a decrease in the total hemoglobin or as the result of an alteration of the hemoglobin constituents.

**hypsokinesis**

A backward swaying or falling in erect posture, seen in paralysis agitans and other neurologic disorders.

**hysteresis**

The maximum difference in output for any given input when the value is approached first with increasing input signal then with decreasing input signal. The nonuniqueness in the relationship between two variables as a parameter increase or decrease.

**hysteresis error**

The difference in response output when increasing a variable as opposed to decreasing that variable.

**hysteretic damping**

Damping due to the internal mechanical properties of materials.

**hysteria**

A highly emotional state. A form of psychoneurosis in which the individual converts anxiety created by emotional conflict into physical symptoms that have no organic basis.

**hyzone**

An unstable, triatomic form of hydrogen, H<sub>3</sub>.

**Hz**

See *Hertz*.

**HZE**

See *high-energy heavy ion*.

Vincoli, Jeffrey W. "I-P"

*Lewis' Dictionary of Occupational and Environmental Safety and Health*

Edited by Jeffrey W. Vincoli

Boca Raton: CRC Press LLC, 2000

**I say again**

*Aviation.* Communication Protocol. The message will be repeated.

**IADL**

See *instrumental activities of daily living*.

**IAEA**

International Atomic Energy Agency.

**IAP**

See *intra-abdominal pressure*.

**IAQ**

See *indoor air quality*.

**IARC**

International Agency for Research on Cancer.

**IATA**

See *International Air Transportation Association*.

**IC**

Integrated circuit. Also *ion chromatography*.  
See also *inspiratory capacity*.

**ICAO**

See *International Civil Aviation Organization*.

**ICAO word list**

A standard word list in which the first letter of each word represents the corresponding sequence of letters in the alphabet (e.g., alpha, bravo, charlie, delta, echo, foxtrot, gulf, hotel, india, juliet, kilo, lima, etc.)

**ICC**

Interstate Commerce Commission (United States).

**ice action on bridge piers**

The force required to break ice, transmitted to bridge piers and other structures in the river. Such a force could damage the structures.

**Ice Age**

See *Pleistocene epoch*.

**ice clause**

*Maritime Law.* A standard clause in the chartering of ocean vessels. It dictates the course a vessel master may take if the ship is prevented from entering the loading or discharging port because of ice, or if the vessel is threatened by ice while in the port. The

clause establishes rights and obligations of both vessel owner and charterer if these events occur.

**ice crystal process**

A process that produces precipitation. The process involves tiny ice crystals in a super-cooled cloud growing larger at the expense of the surrounding liquid droplets. Also called the *Wegener-Bergeron-Findeisen process*.

**ice fog**

A type of fog composed of tiny suspended ice particles that forms at very low temperatures.

**ice gorge**

A conglomeration of ice solidly packed from bank to bank which is obstructing the flow of the river and marine traffic.

**ice nuclei**

Particles that act as nuclei for the formation of ice crystals in the atmosphere.

**ice pellets**

See *sleet*.

**ice pier**

A heavily constructed cluster of piling or concrete behind which towboats moor or shelter from running ice.

**ice shelf**

Seaward extension of an ice sheet, floating but attached to the land on at least one side and bounded on the seaward side by a steep cliff rising 2 to 50 m or more above sea level.

**iceberg**

A large mass of detached land ice in the sea or stranded in shallow water.

**Icelandic low**

The subpolar low-pressure area that is centered near Iceland on charts that show mean sea level pressure.

**ICHCA**

See *International Cargo Handling Coordination Association*.

**ichthyism**

Disease caused by eating rancid fish or poisonous fish.

**ichthyosis**

Dryness, roughness, and scaliness of the skin, resulting from the failure of shedding of the keratin produced by the skin cells.



**icon**

(1) A graphical, nonlinguistic representation of an object or action. (2) A small picture that represents a function, file, or program. In Windows, for example, users can run programs by choosing icons rather than having to remember the program name and type a command.

**iconic memory**

A sensory memory associated with the visual system.

**ICPES**

See *inductively coupled plasma emission spectroscopy*.

**ICRP**

International Commission on Radiological Protection.

**icterus**

Jaundice due to the deposition of bile pigment in the skin and mucous membranes with a resulting yellow appearance of the individual.

**ICW**

See *intracellular water*.

**i.d.**

Inside diameter.

**id**

(1) A Freudian term used to describe that part of the personality which harbors the unconscious, instinctive impulses that lead to immediate gratification of primitive needs such as hunger, the need for air, the need to move about and relieve body tension, and the need to eliminate. Id impulses are physiological and body processes, as opposed to the ego and superego, which are psychological and social processes. The id is dominated by the pleasure principle and some gratification of the id impulses is necessary for survival of a person's personality. (2) A skin eruption occurring as an allergic reaction to an agent causing primary lesions elsewhere.

**ideal blackbody**

See *blackbody*.

**ideal radiator**

See *blackbody*.

**ideal spectrum**

A frequency distribution in which a pure tone appears as a vertical line due to perfectly sharp filtering.

**ideation**

The mental process(es) through which ideas are formed.

**ideational fluency**

The ability to generate a number of ideas on a given topic.

**ident**

*Aviation*. Communication Protocol. A request for a pilot to activate the aircraft transponder identification feature. This will help the controller to confirm an aircraft identity or to identify an aircraft.

**ident feature**

A special feature in the Air Traffic Control Radar Beacon System (ATCRBS) equipment. It is used to immediately distinguish one displayed beacon target from other beacon targets.

**identification**

(1) A mental mechanism by which an individual unconsciously takes as his or her own characteristics, postures, achievements, or other identifying traits of other persons or groups. (2) The official legends "For Official Use Only" and "U.S. Government," and other legends showing either the full name of the department, establishment, corporation, or agency by which it is used, if such title readily identifies the department, establishment, corporation, or agency concerned.

**identification lamps**

Lamps used to identify certain types of commercial motor vehicles.

**identified**

As used in reference to a conductor or its terminal, means that such conductor or terminal can be readily recognized as grounded.

**idiopathic**

A disease of unknown origin or cause.

**idiosyncratic error**

A type of human error due to peculiarities of an individual's characteristics, such as attitudes, social problems, or emotional state.

**idle thrust**

The jet thrust obtained with the engine power control level set at the stop for the least thrust position at which it can be placed.

**idle time**

A temporal interval, excluding standby time, during which a worker, a piece of equipment, or a system is at the workplace, but not producing output, regardless of the cause. See also *delay time*.

**IDLH**

See *immediately dangerous to life and health*.

**IEEE**

Institute of Electrical and Electronics Engineers.

**IEMG**

See *integrated electromyogram*.

**IES**

Illuminating Engineering Society.

**IF**

See *intermediate fix*.

**if no transmission received for (time)**

*Aviation*. Communication Protocol. Used by Air Traffic Control (ATC) in radar approaches to prefix procedures which should be followed by the pilot in the event of lost communications.

**IFR**

See *instrument flight rules*.

**IFS**

See *in-flight survey*.

**ignitable**

Capable of burning or causing fire.

**ignitable waste**

A waste that poses a fire hazard during routine storage, handling, or disposal.

**ignition**

The introduction of some external spark, flame, or glowing object that initiates self-sustained combustion.

**ignition temperature**

(1) The lowest temperature that will cause a gas/vapor to ignite and burn independent of the heating source. (2) The lowest temperature at which sustained combustion for a volatile substance will occur when heated in air or another specified oxidizing environment.

**ignitor**

A device containing a specifically arranged charge of ready burning composition, usually

black powder, used to amplify the initiation of a primer.

**IH**

Industrial hygienist or industrial hygiene.

**ileitis**

Inflammation of the ileum, or lower portion of the small intestine. It may result from infection, obstruction, severe irritation, or faulty absorption of material through the intestinal walls. A specific type of inflammation of unknown cause involving the small and large intestines is known as regional ileitis, regional enteritis, or Crohn's disease. The advanced stage is marked by hardening, thickening, and ulceration of parts of the bowel lining. An obstruction may cause the development of a fistula. A common symptom of ileitis is pain in the lower right quadrant of the abdomen or around the umbilicus. Other symptoms include loss of appetite, loss of weight, anemia, and diarrhea, which may alternate with periods of constipation.

**ileus**

Intestinal obstruction, especially failure of peristalsis. The condition frequently accompanies peritonitis and usually results from disturbances in neural stimulation of the bowel.

**iliac crest**

The lateral, superior rim of the coxal bone.

**iliac spine**

A projection from the coxal bone at the anterior portion of the iliac crest.

**iliocristale height**

The vertical distance from the floor or other reference surface to the highest point of the iliac crest in the midaxillary plane. Measured with the individual standing erect and his/her weight equally balanced on both feet.

**iliospinale**

The most anterior point on the iliac spine.

**iliospinale height**

The vertical distance from the floor or other reference surface to iliospinale. Measured with the individual standing erect and his/her weight evenly distributed between both feet.

**illegally obtained evidence**

Evidence which is obtained in violation of a defendant's rights because officers had no

warrant and no probable cause to arrest or because the warrant was defective and no valid grounds existed for seizure without a warrant.

**illiteracy**

Having no ability to read and write.

**illness**

(1) A condition or pronounced deviation from the normal health state; sickness. Illness can be the result of disease or injury. (2) Sickness, disease, or disorder of body or mind.

**illness incident rate**

The number of annual occupational illnesses experienced by a company in one year, based on 100 full-time employees. Expressed as:

$$IIR = \frac{\text{No. of illnesses} \times 200,000}{\text{No. of man-hours worked}}$$

**illuminance**

The amount of light falling on a surface. Illuminance is expressed in units of foot-candles or lux.

**illuminance category**

An alphabetic character, ranging from A through H, representing illumination ranges for various types of work such that the further the letter is from A, the brighter the light.

**illuminance meter**

A device, composed of a photodetector, filter, and electronic circuitry, for measuring the luminous flux incident on a plane.

**illuminance threshold**

That lowest luminance level which the eye or other image sensor is capable of detecting, given a specified luminance contrast, position within the field of view, dark adaptation, flicker rate, source dimensions, and color.

**illuminant**

Any light source or combination of light sources.

**illuminant A**

A standard CIE illuminant corresponding to a typical tungsten filament incandescent lamp.

**illuminant B**

A standard CIE illuminant corresponding to direct sunlight.

**illuminant C**

A standard CIE illuminant corresponding to average daylight.

**illuminant D**

A series of standard CIE illuminants corresponding to a daylight which measures beyond the normal visible spectrum.

**illuminate**

To distribute or provide light to an area or region.

**illumination**

The density of light flux incident upon a surface.

**illusion**

A perceptual misinterpretation of a stimulus.

**ILO**

International Labor Organization (of the United Nations).

**IM**

See *inner marker*.

**image**

(1) The sum of the perceptions by an individual, group, or population about itself or another entity. (2) An electronic or photographic representation of one or more entities. (3) A subjective sensory experience, especially in the visual modality.

**image analysis**

Any computer or other electronic processing to quantify an image, usually with the intent of deriving some statistically based conclusions.

**image enhancement**

That electronic or other processing to improve the resolution, features, or other quality of an electronic or photographic image.

**image processing**

Any type of computer-based alteration of the data representing an image, including enhancement, analysis, and reconstruction.

**image reconstruction**

The process of re-working data for image enhancement.

**IMC**

See *instrument meteorological conditions*.

**immaterial evidence**

Evidence which lacks probative weight and is unlikely to influence the tribunal in resolving

the issue before it. Such evidence is commonly objected to by opposing counsel, and disallowed by the court.

**immaterial facts**

Those which are not essential to the right of action or defense.

**immaterial issue**

In pleading, an issue taken on an immaterial point; that is, a point not proper to decide the action.

**immediate cause**

The last of a series or chain of causes tending to a given result, and which, of itself, and without the intervention of any further cause, directly produces the result or event. A cause may be immediate in this sense, and yet not "proximate," and, conversely, the proximate cause (that which directly and efficiently brings about the result) may not be immediate. The familiar illustration is that of a drunken man falling into the water and drowning. His intoxication is considered the proximate cause of his death, if it can be said that he would not have fallen into the water when sober; but the immediate cause of death is suffocation by drowning. *See also proximate cause.*

**immediate danger**

The definition of "immediate danger" as part of the humanitarian doctrine contemplates that there be some inexorable circumstance, situation, or agency bearing down on the plaintiff with reasonable probability of danger prior to the negligent act of the defendant.

**immediately**

*Aviation.* Communication Protocol. Used by Air Traffic Control (ATC) when such action compliance is required to avoid an imminent situation.

**immediately dangerous to life and health (IDLH)**

The maximum level to which a healthy individual can be exposed to a chemical for thirty minutes and escape without suffering irreversible health effects or impairing symptoms. For example, some materials such as hydrogen fluoride gas and cadmium vapor may produce immediate transient effects that, even if severe, may pass without medical attention, but are followed by sudden, possibly fatal collapse 12-72 hours after exposure. The vic-

tim "feels normal" after recovery from transient effects until collapse. Such materials in hazardous quantities are considered to be "immediately" dangerous to life or health.

**immersion foot**

That damage to the skin, blood, vessels, and nerves of the feet resulting from prolonged exposure to water at temperatures between freezing and approximately 60°F.

**imminent danger**

Any conditions or practices in a place of employment which are such that danger exists which could reasonably be expected to cause death or serious physical harm immediately or before the imminence of such danger can be eliminated.

**imminent hazard**

(1) *General.* A hazardous situation, condition, or circumstance the nature of which poses a serious and imminent threat to human health or the environment. If actions are not taken to immediately correct or stop the hazard cause, the results could be catastrophic. (2) *Federal Insecticide, Fungicide, and Rodenticide Act.* A situation which exists when the continued use of a pesticide during the time required for cancellation proceedings would be likely to result in unreasonable adverse effects on the environment or will involve unreasonable hazard to the survival of a species declared endangered or threatened by the Secretary of Agriculture pursuant to the Endangered Species Act of 1973.

**imminently hazardous chemical substance or mixture**

A chemical substance or mixture which presents an imminent and unreasonable risk of serious or widespread injury to health or to the environment. Such a risk to health or the environment shall be considered imminent if it is shown that the manufacture, processing, distribution in commerce, use, or disposal of the chemical substance or mixture, or that any combination of such activities, is likely to result in such injury to health or the environment.

**immiscible**

Not capable of being uniformly mixed or blended.

**immune**

Not affected or responsive. Not susceptible to a particular disease.

**immunity**

Not susceptible. Biologically, immunity is usually to a specific infectious agent and is one result of infection. The quality or condition of being immune. An inherited, acquired, or induced condition to a specific pathogen. The power of the body to successfully resist infection and the effects of toxins.

**immunoassay**

The measurement of an antigen-antibody interaction.

**immunodeficient**

Lacking in the ability to produce antibodies in response to an antigen.

**immunoglobulin**

Serum globulin having antibody activity. Most of the antibody activity apparently resides in the gamma fraction of globulin.

**immunotoxin**

An antibody to the toxin of a microorganism, zootoxin (spider or bee toxin), or phytotoxin (toxin from a plant) which combines specifically with the toxin, resulting in the neutralization of its toxicity.

**IMO**

See *International Maritime Organization*.

**impact**

A rapid transmission of physical momentum from one object to another in a mechanical system.

**impact acceleration**

An acceleration lasting less than one second.

**impact acceleration profile**

A graphical display or plot of the deceleration sequence experienced by a vehicle in a crash.

**impact analysis**

A subjective technique for attempting to quantify the positive and negative aspects of a system or plan.

**impact attenuation**

The reduction in impulsive forces due to cushioning or other means of spreading out the forces in space or time.

**impact biodynamics**

See *biodynamics*.

**impact load**

A force implemented by a rapid blow.

**impact noise**

Variations in the noise level such that the maximum noise level occurs at intervals of greater than one second.

**impact strength**

The impulse energy required to fracture a material.

**impact velocity**

The velocity at which one object strikes another.

**impaction**

The forcible contact of particles with a surface. The cascade impactor is a device that operates on this principle.

**impactor**

An object which makes contact with another body or structure.

**impairment**

Any dysfunction in which one or more body systems or subsystems are not capable of functioning to the degree considered normal.

**impartial expert**

A witness appointed by tribunal for an unbiased opinion on a matter addressed to the court.

**impedance**

Obstruction or opposition to passage or flow, as of an electric current or other form of energy. See also *electrical impedance*.

**imperial gallon**

A British gallon, slightly larger than the U.S. gallon (an older term).

**impermeable**

Not capable of being permeated or not allowing substances to pass through the openings or interstices of the material.

**impetigo**

A skin disease characterized by pustules and caused by streptococci, often in association with staphylococci. The disease occurs most frequently in children, especially in very young infants because of their low resistance. It is spread by direct contact with the moist discharges of the lesions.

**impingement**

The process by which particulate material in air is collected by passing the air through a

nozzle or jet and impinging the air-particle mixture onto a surface that is immersed in a liquid, such as water. The particles are retained in the liquid. The midget and Greenburg-Smith impingers are examples of instruments using this principle of dust collection.

**impinger**

A sampling device used to collect airborne particulates. The midget impinger and the Greenburg-Smith impinger were widely used types.

**implementation allowance**

That time allowance provided for workers in beginning new techniques or changing to a different method to prevent them from losing income during the change.

**implosion**

A violent inward collapse of an item, such as an evacuated glass vessel.

**importance**

A subjective rating of greater worth, necessity, or regard relative to other items or functions.

**importance principle**

A rule stating that displays and controls with the greatest operational importance should be placed in optimum locations with regard to convenient access and visibility.

**imports**

Receipts of goods into the 50 states and the District of Columbia from foreign countries and from Puerto Rico, the Virgin Islands, and other U.S. possessions and territories.

**impounding space**

A volume of space formed by dikes and floors which is designed to confine a spill of hazardous liquid.

**impounding system**

Includes an impounding space, including dikes and floors for conducting the flow of spilled hazardous liquids to an impounding space.

**impoundment**

A body of water or sludge confined by a dam, dike, floodgate, or other barrier.

**imprecision**

That variance due to measurement error from repeated measurements within a short period

of time, and which are attributed to measurement process only.

**impression**

(1) An indentation or dent. (2) A negative copy or counterpart of some object made by bringing into contact with the object, with varying degrees of pressure, some plastic material that later becomes solidified. (3) An effect on the mind or senses produced by external objects.

**improbable**

In terms of probability of hazard or mishap occurrence, a hazard or event whose occurrence is so unlikely during the life of an item or system, it can be assumed that the hazard will not occur.

**improper loading**

*Maritime Safety.* Loading, including weight shifting, of a vessel causing instability, limited maneuverability, or dangerously reduced freeboard.

**improper lookout**

*Maritime Safety.* No proper watch; the failure of the operator to perceive danger because no one was serving as lookout, or the person so serving failed in that regard.

**impulse**

(1) A human urge based more on emotional than cognitive factors and without significant consideration of possible consequences. (2) The area under the curve of a force for the brief time duration of the force application.

**impulsive force**

See *impact*.

**impulsive noise**

An acoustic event characterized by very short rise time and duration.

**impurity**

*Chemicals.* (1) A chemical that remains in a product that is distributed in commerce. (2) A chemical substance which is unintentionally present in another chemical substance.

**imputed negligence**

The negligence of one person may be chargeable to another depending upon the relationship of the parties. For example, the negligence of an agent acting within the scope of his/her employment is chargeable to the principal.



**in**

Inch.

**in<sup>2</sup>**

Square inch or square inches.

**in<sup>3</sup>**

Cubic inch or cubic inches.

**in bulk**

The transportation, as cargo, of property, except Class A and B explosives and poison gases, in containment systems with capacities in excess of 3,500 water gallons.

**in draft**

*Maritime Navigation.* Current moving across the lock entrance toward the shore.

**in-out racks**

*Maritime.* Dry land boat storage on a vertical rack system.

**in phase**

Pertaining to waveforms having the same frequency and which are at the same point in their respective cycles at the same time.

**in shape**

*Maritime Navigation.* Term used when a tow is properly aligned for entering a lock or passing through a narrow channel or opening between bridge piers.

**in situ**

In its original place.

**in-stream use**

Water use taking place within a stream channel, e.g., hydroelectric power generation, navigation, water quality.

**in the marks**

*Maritime Navigation.* Proceeding along the channel line as described in the channel report. Well on the line (imaginary) running from one mark to the other or from one light to the other.

**in-use mile per gallon (mpg)**

A miles per gallon (mpg) that was adjusted for seasonal fluctuations and annual miles traveled.

**in vitro**

(1) "In glass" (a test-tube culture). (2) Any laboratory test using living cells taken from an organism. Refers to an experiment or procedure that is observable with a test tube,

other laboratory equipment, or an artificial environment.

**in vivo**

In the living body of a plant or animal, in vivo tests are those laboratory experiments carried out on whole animals or human volunteers.

**inaccessible**

Incapable of being reached or entered by a human, a human body part, a remotely operated system, or a tool for retrieval or repair of a system or subsystem.

**inactive aircraft**

All legally registered civil aircraft which flew zero hours.

**inactive window**

In computing, an open, perceptually and functionally available window which must be activated before the user may work within it.

**inadequate damages**

Damages are referred to as "inadequate" (within the rule that an injunction will not be granted where adequate damages at law could be recovered for the injury sought) when such a recovery at law would not compensate the parties and place them in the position in which they formerly stood.

**inapparent infection**

Infection without recognizable clinical signs or symptoms.

**inboard-outboard**

*U.S. Coast Guard.* Regarded as inboard because the power unit is located inside the boat. Also referred to as *inboard/outdrive*.

**incandescence**

The emission of light and other forms of electromagnetic energy due solely to heating a source material.

**incandescent lamp**

A light source derived from incandescence, usually from electrical heating of a filament within a sealed bulb.

**incapacitated person**

Any person who is impaired by reason of mental illness, mental deficiency, physical illness or disability, advanced age, chronic use of drugs, chronic intoxication, or other cause (except minority) to the extent that he/she lacks sufficient understanding or capacity to

make or communicate responsible decisions concerning his/her person.

**incendiary**

A material that is primarily used to start fires.

**incendive spark**

A spark of sufficient temperature and energy to ignite a flammable vapor/gas.

**incentive**

Any condition which motivates behavior to obtain a reward or avoid punishment.

**incentive operators**

Those employees whose wages are determined either entirely or in part by the quality and/or quantity of their output.

**incentive pace**

The performance level of a worker under incentive conditions and without excess fatigue.

**incentive plan**

Any procedure by which an organization attempts to promote increased productivity.

**incerfa (uncertainty phase)**

*Aviation.* A situation wherein uncertainty exists as to the safety of an aircraft and its occupants.

**inch**

A unit of length in the English system, equal to 2.54 cm in the metric system.

**inch of mercury**

A unit used in measuring or expressing pressure. One inch of mercury pressure is equivalent to 0.491 pounds per square inch.

**inches of water**

A pressure term. One inch of water is equal to 0.0735 inches of mercury, or 0.036 pounds per square inch (psi). Atmospheric pressure at standard conditions is 407 inches water gauge (w.g.).

**incidence**

Number of new cases of diseases within a specified period of time.

**incidence (or incident) rate**

For OSHA recordkeeping purposes, the number of injuries, illnesses, or lost workdays related to a common exposure base of 100 full-time workers (working 40 hours per week, 50 weeks per year).

**incident**

(1) *General.* An occurrence, happening, or energy transfer that results from either positive or negative influencing events and may be classified as an accident, mishap, near-miss, or none of them, depending on the level and degree of the negative or positive outcome. (2) *Transportation.* Collisions, derailments, personal casualties, fires, and property damage in excess of \$1000, associated with transit agency revenue vehicles; all other facilities on the transit property; and service vehicles, maintenance areas, and rights-of-way.

**incident reporting thresholds**

*Transit.* For an incident to be reportable, it must involve a transit vehicle or occur on transit property, and result in death, injury, or property damage in excess of \$1,000.

**incidental damages**

Any commercially reasonable charges, expenses, or commissions incurred as a result of the stopping of a delivery; in the transportation, care and custody of goods after the buyer's breach; in connection with the return or resale of the goods; or otherwise resulting from the breach. Also, such damages, resulting from a seller's breach of contract, include expenses reasonably incurred in inspection, receipt, transportation, and care and custody of goods rightfully rejected, any commercially reasonable charges, expenses, or commissions in connection with effecting cover and any other reasonable expense incident to the delay or other breach.

**incidental element**

See *irregular element*.

**incidental learning**

The acquisition of information or skills as a byproduct of one's simple presence or through other, unrelated activities.

**incidental vibration**

Any unintended vibration (an older term).

**incineration**

(1) Burning of certain types of solid, liquid, or gaseous materials. (2) A treatment technology destruction of waste by controlled burning at high temperatures, e.g., burning sludge to remove the water and reduce the remaining residues to a safe, nonflammable ash which can be disposed of safely on land, in some waters, or in underground locations.

**incineration at sea**

Disposal of waste by burning at sea on especially designed incinerator ships.

**incineration vessel**

According to CERCLA: Any vessel which carries hazardous substances for the purpose of incineration of such substances, so long as such substances or the residues of such substances are on board.

**incinerator**

A furnace for burning wastes under controlled conditions.

**incipient fire stage**

A fire which is in the initial or beginning stage and which can be controlled or extinguished by portable fire extinguishers, Class II type standpipe, or small hose systems without the need for protective clothing or breathing apparatus.

**incisor**

Any one of the four front teeth of either jaw.

**inclination**

A sloping or leaning; the angle of deviation from a particular line or plane of reference.

**incline railway**

*Rail Operations.* A railway used to traverse steep slopes.

**inclined manometer**

A manometer, used in pressure measurement, that amplifies the vertical movement of the water column through the use of an inclined leg.

**inclined plane**

*Rail Operations.* Railway operating over an exclusive right-of-way on steep grades with unpowered vehicles propelled by moving cables attached to the vehicles and powered by engines or motors at a central location not on board the vehicle.

**inclined plane vehicles**

*Rail Operations.* Special type of passenger vehicles operating up and down slopes on rails via a cable mechanism.

**inclusion**

(1) Any unintended or undesirable foreign particle in a finished object. (2) Enclosure within something else. (3) Anything that is enclosed.

**incombustible**

Incapable of burning.

**incompatible**

(1) Describes materials that may cause dangerous, violent, or lethal reactions when coming into direct contact with each other. (2) Not suited for harmonious coexistence or simultaneous administration; not to be combined in the same preparation or taken concomitantly.

**incompetence**

An inadequacy for performing a certain function, regardless of cause.

**inconsistent**

Mutually repugnant or contradictory. Contrary, the one to the other, so that both cannot stand, but the acceptance or establishment of the one implies the abrogation or abandonment of the other.

**incontinence**

An inability to control the elimination of feces and/or urine.

**incorporation by reference**

The inclusion of specifications, requirements, regulations, or other information into a given document simply by referring to a second document which already contains the desired information.

**incremental threshold**

See *difference threshold*.

**incubate**

(1) To provide proper conditions for growth and development, as to maintain optimal temperature for the growth of bacteria. (2) Material that has been incubated.



*One of the more common uses of incubation, a premature infant in an incubator is provided the care it will need to survive*

**incubation**

The growth and development of microorganisms.

**incubation period**

The time interval between effective exposure of a susceptible host to an agent (infection) and onset of clinical signs and symptoms of disease in that host. Incubation periods of some common communicable diseases are noted in the table below.

Disease Name	Incubation Period*	
	Average	Range
Amoebic dysentery	21 – 21	8 – 90
Anthrax	1 – 4	1 – 7
Bacillary dysentery	2 – 4	1 – 7
Brucellosis	14	6 – 30+
Chancroid	3 – 5	1 – 12
Chickenpox	14	12 – 21
Cholera	3	1 – 5
Dengue	5 – 6	3 – 15
Diphtheria	2 – 5	2 – 5
Erysipelas	0 – 2	0 – 2
Food Poisoning:		
Staphylococcus	2 – 4 hr.	1 – 6 hr.
Salmonella	12 hr.	6 – 48 hr.
Botulinus	18 – 24 hr	2 – 48 hr
German measles	16 – 18	10 – 21
Gonorrhea	3 – 5	1 – 14
Hepatitis, infectious	25	15 – 35
Hepatitis, serum	80 – 100	60 – 180
Impetigo contagiosa	5	5
Infectious keratoconjunctivitis	5 – 7	5 – 7
Influenza	1 – 3	1 – 3
Malaria	10 – 17	up to 35+
Measles	9 – 14	9 – 14
Meningitis, meningococci	7	2 – 10
Mumps	18	12 – 26
Paratyphoid	1 – 10	1 – 10
Pertussis	5 – 9	2 – 21
Plague	3 – 6	3 – 6
Pneumonia, bacterial	1 – 3	1 – 3
Puerperal infection	1 – 3	1 – 3
Rabies	14 – 42	10 – 180
Relapsing fever (tick)	3 – 6	2 – 12
Relapsing fever (louse)	7	5 – 12
Rocky Mountain spotted fever	3 – 10	3 – 10
Scabies	1 – 2	1 – 2
Scarlet fever	2 – 5	2 – 5
Smallpox	12	7 – 21
Syphilis	21	10 – 90
Tetanus	4 – 21	4 – 21
Tuberculosis	variable	variable
Tularemia	3	1 – 10
Typhoid fever	7 – 14	3 – 38
Yellow Fever	3 – 6	3 – 6

\* "Average" and "Range" are in DAYS unless otherwise noted

**incubus**

(1) A nightmare. (2) A heavy mental burden.

**incurable disease**

(1) Any disease which has reached an incurable stage in the patient afflicted therewith, according to general state of knowledge of the medical profession. (2) A disease for which there is no known cure.

**incurred risk**

A defense to a claim of negligence, separate and distinct from a defense of contributory negligence. It contemplates acceptance of a specific risk of which the plaintiff has actual knowledge.

**incus**

The middle bone of the auditory ossicles in the middle ear.

**indemnification agreement**

A written promise by one party that it will not hold another party liable. Also called a **hold harmless clause**.

**indemnify**

To restore the victim of a loss, in whole or in part, by payment, repair, or replacement.

**indemnity insurance**

Insurance which provides indemnity against loss, in contrast to contracts which provide for indemnity against liability. The latter are known as liability contracts or policies, and the former as indemnity contracts or policies. *See also insurance.*

**independent**

Not capable of being influenced by other systems.

**independent audit**

One conducted by an outside person or firm not connected in any way with the company or person being audited. *See also audit.*

**independent contractor**

Generally, one who, in the exercise of an independent employment, contracts to do a piece of work according to his/her own methods and is subject to his/her employer's control only as to the end product or final result of his/her work.

**independent pole scaffold**

*See double pole scaffold.*

**Independent Private Sector Inspector General (IPSIG)**

Legal auditor or investigator who reviews the risk management factors in a company. This

may include attesting to the adequacy of a compliance program, independent audits, and hot line operation.

**independent psychomotor abilities**

A set of movement capabilities reportedly determined by factor analysis to be independent of one another and which may be used for task and job analyses, performance measurement, etc.

**independent surveillance**

*Aviation.* A system which requires no airborne compatible equipment.

**independent variable**

A variable which can be either set to a desired value or controlled by the experimenter, or matched or observed as it occurs naturally.

**indeterminate errors**

Errors that occur randomly and whose cause is not determinable and thereby cannot be corrected.

**index finger**

The three phalanges and surrounding tissues of digit II of the hand.

**index finger length**

The linear distance from the thumb crotch to the tip of the index finger. Measured with the index finger fully extended. This definition is not consistent with other finger or finger segment lengths, since it includes a portion of the metacarpal length.

**index of difficulty**

An indication of the amount of information required to generate a movement. *See also Fitts' law.*

$$ID = \log_2 \left( \frac{2A}{W} \right)$$

where:

*A* = distance to the target

*W* = width of the target

**index of forecasting efficiency**

That reduction in prediction error obtained by using the correlation between two variable.

$$E = 1 - \sqrt{1 - r^2}$$

where:

*r* = the correlation between the variables

**index of physiological effects**

A measure of heat stress.

**index of refraction**

The value of the ratio of the velocity of electromagnetic radiation in one medium relative to another medium. A constant for a given pair of media and a given wavelength.

**index of relative strain**

A measure of heat stress based on clothing insulation and clothing effects on evaporation.

**index of thermal stress**

An indicator of the degree of heat stress which predicts the sweating rate required to cool the body based on the heat load combined with the effects of clothing and humidity levels.

**Indian reservation**

A part of public domain set aside by proper authority for use and occupation of a tribe or tribes of Indians, and under superintendence of the government which retains title to the land.

**Indian summer**

An unreasonably warm spell of weather with clear skies near the middle of autumn. Usually follows a substantial period of cool weather.

**indicated airspeed**

The speed of an aircraft as shown on its pitot static airspeed indicator calibrated to reflect standard atmosphere adiabatic compressible flow at sea level uncorrected for airspeed system errors. *See also airspeed.*

**indicating thermometer**

A non-recording thermometer that allows the user to measure the temperature, generally on the Fahrenheit scale.

**indication**

(1) The response or evidence from the application of a nondestructive examination, including visual inspection. (2) The information conveyed by the aspect of a signal.

**indication locking**

*Rail Operations.* Electric locking which prevents manipulation of levers that would result in an unsafe condition for a train movement if a signal, switch, or other operative unit fails to make a movement corresponding to that of its controlling lever, or which directly prevents

the operation of a signal, switch, or other operative unit, in case another unit which should operate first fails to make the required movement.

**indicator**

(1) *Instrumentation*. Any device for displaying information. (2) *Biology*. An organism, species, or community whose characteristics show the presence of specific environmental conditions.

**indicator compounds**

Chemical compounds, such as carbon dioxide, whose presence at certain concentrations may be used to estimate certain building conditions (e.g., airflow, presence of sources).

**indictment**

A formal written accusation originating with a prosecutor and issued by a grand jury against a party charged with a crime.

**indigestion**

Failure of the digestive function; dyspepsia. Among the symptoms of indigestion are heartburn, nausea, flatulence, cramps, a disagreeable taste in the mouth, belching, and sometimes vomiting or diarrhea. Ordinary indigestion can result from eating too much or too fast; from eating when tense, tired, or emotionally upset; from food that is too fatty or spicy; and from heavy fried food or food that has been badly cooked or processed. Indigestion and its symptoms may also accompany other disorders such as allergy, migraine, influenza, typhoid fever, food poisoning, peptic ulcer, inflammation of the gallbladder (chronic cholecystitis), appendicitis, and coronary occlusion (heart attack).

**indirect anthropometric measurement**

A bodily measurement obtained by remote or noncontact techniques, such as stereometric anthropometry.

**indirect cause**

A contributing causal factor other than direct cause associated with an incident.

**indirect discharge**

Introduction of pollutants from a nondomestic source into a publicly owned waste treatment system. Indirect dischargers can be commercial or industrial facilities whose wastes go into the local sewers.

**indirect employment**

In respect to waterways industry, not necessarily engaged directly in river activities, but dependent upon the river.

**indirect labor**

That work which is a part of indirect operations.

**indirect lighting**

That illuminated environment in which approximately 90% or more of the luminous flux is directed toward a continuous solid structure away from a task.

**indirect material**

Any of the materials not used in direct operations.

**indirect operations**

Those administrative, management, or other functions within an organization necessary to support the manufacture or output of a product but which are not directly involved in producing a product or service for sale in the marketplace and which do not add value to that product.

**indirect point source discharges**

Discharge by industries of pollutants indirectly into U.S. waters through publicly owned treatment works (POTW).

**indirect radiation effect**

Any of those cellular effects causing damage to DNA by first creating radicals in other bodies or cellular materials, which in turn affect the DNA.

**indirect source**

Under the Clean Air Act, any facility, building, structure, installation, real property, road, or highway which attracts, or may attract, mobile sources of pollution.

**indirect viewing**

The use of video or other aids to view a scene or object being manipulated when direct viewing is not practical or possible.

**indirect vision**

Peripheral vision.

**indirect worker**

An employee involved in indirect operations.

**indium**

A chemical element, atomic number 49, atomic weight 114.82, symbol In.



**individual incentive plan**

An incentive plan in which each worker is rewarded based on his/her own efforts.

**individual-rung ladder**

A fixed ladder, each rung of which is individually attached to a structure, building, or equipment.

**indolent**

A person who is not inclined to work. An habitually lazy person.

**indoor air**

The breathing air inside a habitable structure or conveyance.

**indoor air pollution**

The presence of chemical, physical, or biological contaminants in indoor air in concentrations that could have an adverse effect on human health.

**indoor air quality (IAQ)**

General term that applies to the assurance or the evaluation and assessment of indoor air pollution to determine if contaminant levels exceed established standards for a particular pollutant or set of pollutants.

**indoor climate**

Temperature, humidity, lighting, and noise levels in a habitable structure or conveyance. Indoor climate can affect indoor air pollution.

**indoors work**

See *inside work (1)*.

**induced draft**

Negative pressure created by the action of a fan or ejector located between a combustion chamber and a stack/exhaust vent.

**induced environment**

That environment imposed upon an object or system from manmade conditions.

**induced radioactivity**

Radioactivity produced in certain materials as a result of nuclear reactions that involve the formation of unstable nuclei.

**induction**

(1) The generation of an electrical current by a change in magnetic flux in a conductor. (2) The alteration of a perception by indirect stimulation. (3) The process or act of inducing, or causing to occur. (4) See *inductive reasoning*.

**inductive reasoning**

The ability to integrate specific, diverse bits of information to arrive at a general conclusion.

**inductively coupled plasma emission spectroscopy (ICPES)**

A method typically used for the simultaneous analysis of many heavy metals.

**inductor**

*Rail Operations.* A track element consisting of a mass of iron, with or without a winding, that stimulates the train control, train stop, or cab signal mechanisms on the rail vehicle.

**industrial anthropometry**

The use of anthropometry for designing and constructing equipment for human use in the industrial environment. See also *human factors*.

**industrial dermatitis**

An inflammation of the skin surface caused by contact with industrial compounds and a subsequent allergic reaction. See also *dermatitis*.

**industrial disease**

See *occupational illness*.

**industrial engineer**

One who is qualified by education, training, and experience to practice the discipline of industrial engineering.

**industrial engineering**

That engineering discipline concerned with the design, development, installation, and improvement of integrated systems of people, materials, equipment, and energy in the industrial environment.

**industrial ergonomics**

Human factors applied to an industrial setting.

**industrial hygiene (IH)**

The art and science of anticipating, recognizing, evaluating, and controlling occupational and environmental health hazards in the work place and the surrounding community.

**industrial hygienist**

An individual who possess a degree from an accredited university in industrial hygiene, chemistry, physics, medicine, or other physical or biological science, and who, by virtue of specialized studies and training, has acquired competence in industrial hygiene.

**industrial medicine**

See *occupational medicine*.

**industrial psychology**

That field of study and practice involving the testing, development of criteria and predictors for personnel selection and human performance in the workplace.

**industrial radiography**

The examination of the macroscopic structure of materials by nondestructive methods using sources of ionizing radiation.

**industrial robot**

A programmable manipulator for moving or operating on materials, components, products, or other objects in the industrial environment.

**industrial safety**

See *occupational safety*.

**industrial solid waste**

The solid waste generated by industrial processes and manufacturing.

**industrial special**

*Aviation.* Any use of an aircraft for specialized work allied with industrial activity, excluding transportation and aerial application, e.g., pipeline patrol, survey, advertising, photography, helicopter hoist, etc.

**industrial ventilation (IV)**

The equipment or operation associated with the supply or exhaust of air, by natural or mechanical means, to control airborne hazards in the industrial setting.

**industrial sector**

Construction, manufacturing, agricultural, and mining establishments.

**industrial terminal**

A specialized terminal whose primary purpose is manufacturing, not transportation services.

**industrial track**

*Rail Operations.* A switching track serving industries, such as mines, mills, smelters, and factories.

**industry briefing**

*Maritime.* The appearance of Coast Guard Standards-trained personnel before a gathering of boat and/or associated equipment manufacturers and/or dealers.

**industry rank report**

A report from OSHA's National Office in Washington, DC supplied to each local Area Office that ranks industries (such as automotive, petroleum refining, transportation, etc.) according to their lost workday injury (LWDI) rate. See also *establishment list*.

**industry standards**

With regard to issues of compliance: Organizations must know what the relevant industry and regulatory standards are and make sure their own programs' features meet those standards. See also *effective compliance program*.

**industry track**

*Rail Operations.* A switching track, or series of tracks, serving the needs of a commercial industry other than a railroad.

**ineffective time**

That part of the elapsed time spent on any activity which is not a specified part of the task or job, excluding check time.

**inert**

Not chemically reactive at normal temperature and pressures.

**inert atmosphere**

The atmosphere of a confined space that has been made non-flammable, non-explosive, or otherwise chemically non-reactive and, therefore, also generally incapable of supporting or sustaining human life.

**inert condition**

A tank or other enclosure is in an inert condition when the oxygen content of the atmosphere throughout the enclosed space has been reduced to 8% or less by volume through the addition of an inert gas.

**inert dirt**

Any form of dirt which has no inherent attraction to any surface except through gravitation.

**inert dust**

Dusts which have a long history of little or no adverse effect on lungs and do not produce significant organic disease or toxic effect when enclosures are kept under reasonable control. Such dusts are often called biologically inert dusts. See also *nuisance dust*.

**inert gas**

A non-reactive gas such as argon, helium, neon, or krypton. These are gases that will not burn or support combustion, and are not toxic. Nitrogen is often used as an inert gas in process operations for reducing the risk of fire and/or explosion.

**inert gas narcosis**

A toxic effect of the diluting or carrier gas in a breathing mixture at increased pressures, characterized by euphoria, diminished cognitive function, and impaired coordination. Also referred to as *diluent gas narcosis*. See also *nitrogen narcosis*.

**inert ingredient**

An ingredient which is not active.

**inertia**

The tendency of a body at rest to remain at rest or a body in motion to stay in motion in a straight line unless distributed by an external force.

**inertial frame**

A reference frame to which the law of inertia applies.

**inertial navigation system**

*Aviation.* An Area Navigation (RNAV) system which is a form of self-contained navigation.

**inertial separator**

A device that uses centrifugal force to separate waste particles.

**inerting**

The displacement of the atmosphere in a permit space by a noncombustible gas (such as nitrogen) to such an extent that the resulting atmosphere is noncombustible. This produces an oxygen-deficient atmosphere that is immediately dangerous to life and health.

**inevitable accident**

*Law.* An unavoidable accident. One produced by an irresistible physical cause. An accident which cannot be prevented by human skill or foresight, but results from natural causes, such as lightning or storms, perils of the sea, inundation or earthquake, or sudden death or illness. In legal terms, an accident is termed "inevitable" so as to preclude recovery on the grounds of negligence, if the person by whom it occurs neither has nor is legally

bound to have sufficient power to avoid it or prevent its injuring another person.

**inexcusable neglect**

Such neglect which will preclude the setting aside of default judgement and implies something more than the unintentional inadvertence or neglect common to all who share the ordinary frailties of mankind.

**infant**

A child less than two years of chronological age.

**infant formula**

Under the Federal Food, Drug and Cosmetic Act: A food which purports to be or is represented for special dietary use solely as a food for infants by reason of its simulation of human milk or its suitability as a complete or partial substitute for human milk.

**infant mortality**

(1) *General.* The death of an infant. (2) *Production.* The failure of a system in the early portion of its projected useful life.

**infant mortality rate**

The reported death rate for infants under one year of age per 1000 reported live births in a calendar year for a specified region.

**infarct**

A localized area of ischemic necrosis produced by occlusion of the arterial supply or the venous drainage of the part.

**infarction**

The development or presence of an infarct.

**infected person**

A person who harbors an infectious agent, whether or not the infection is accompanied by disease.

**infection**

The entry and multiplication of an infectious agent that occurs in the body tissues of a human or animal and that results in cellular injury. Several factors are necessary for the development of an infection. The microorganisms must enter the body in sufficient number and they must be virulent, or capable of destroying healthy tissues. The host must be susceptible to the disease. If the host has developed immunity to the disease, either by having had the disease or by having undergone immunization, he/she will not be af-

ected by the microorganisms. Some persons have greater natural resistance to infections than others. Finally, the disease must be transmitted through the proper route. Infection may be transmitted by *direct contact*, by *indirect contact*, or by *vectors*. Direct contact may be with body excreta such as urine, feces, or mucous, or with drainage from an open sore, ulcer, or wound. Indirect contact refers to transmission via inanimate objects such as bed linens, doorknobs, drinking glasses, or eating utensils. Vectors are flies, mosquitoes, or other insects capable of harboring and spreading the infectious agent. Synonymous with the term *infectious disease*.

**infectious**

Capable of invading a susceptible host, replicating, and causing an altered host reaction, such as disease.

**infectious agent**

An organism, usually a microorganism, that is capable of producing infection or infectious disease.

**infectious disease**

A disease of humans or animals resulting from the invasion of the body by pathogenic agents and the reaction of the tissue to these agents and/or the toxins they may produce. See *infection*.

**infectious waste**

(1) Equipment, instruments, utensils, and formites of a disposable nature from the rooms of patients who are suspected to have or have been diagnosed as having a communicable disease and must, therefore, be isolated as required by public health agencies. (2) Laboratory wastes, such as pathological specimens (e.g., all tissues, specimens of blood elements, excreta, and secretions obtained from patients or laboratory animals) and disposable formite (any substance that may harbor or transmit pathogenic organisms) attendant thereto, and similar disposable materials from outpatient areas and emergency rooms.

**inference**

The conclusion resulting from the inductive reasoning process.

**inference space**

Those limits within which the results of an experiment may be applied.

**inferential statistics**

A technique for inferring something and drawing conclusions from data or information obtained from a representative sample taken from a population. It provides a means of drawing conclusions about a larger body or population based on sample data from that population.

**inferior**

(1) Of less than acceptable quality or performance. (2) Lower than or beneath some reference structure in position.

**inferior angle of scapula**

The thick lowermost portion of the scapula.

**inferior mirage**

See *mirage*.

**inferior nasal concha**

A bone forming part of the lateral wall of the nasal cavity.

**inferior oblique muscle**

A voluntary extraocular muscle extending beneath the eyeball. Principally for rotation of the upper part of the eye laterally about the optical axis.

**inferior rectus muscle**

A voluntary extraocular muscle parallel to the optical axis beneath the eyeball. Involved in the anterior downward pitch/rotation of the eye.

**infestation**

The lodgment, development, and reproduction of arthropods such as mites, ticks, or fleas on the surface of the body, in clothing, or in dwellings.

**infiltration**

(1) The penetration of water through the ground surface into subsurface soil or the penetration of water from the soil into sewer or other pipes through defective joints, connections, or manhole walls. (2) A land application technique where large volumes of wastewater are applied to land, allowed to penetrate the surface and percolate through the underlying soil. See also *percolation*. (3) Air leakage into a space through cracks and interstices, and through ceilings, floors, and walls.

**inflammable**

See *flammable*.

**inflammation**

Normal tissue response to cellular injury or foreign material invasion, characterized by dilation of small blood vessels (capillaries) and mobilization of defense cells. The injury may be caused by a physical blow, or by exposure to an excessive amount of radiation from sunlight, x-rays, or an ultraviolet lamp; or it may be caused by corrosive chemicals, burns, extreme heat or cold, or foreign objects. Inflammation is also the usual response to a bacterial infection. The physiological changes that take place during the inflammatory process include vascular dilation, leukocytosis, and fluid exudation. The vascular changes occur at the site of the injury to the tissues. There is automatic dilation of the capillaries and arterioles so that a greater supply of blood is brought to the area. The speed of circulation is decreased with the result that leukocytes leave the blood vessels and enter the tissues spaces. The vascular changes are responsible for the redness that accompanies inflammation. The injured tissues release chemicals that attract the leukocytes to the site of the injury. There, they ingest or surround and destroy the cause of the inflammation. Body fluids also collect at the site. This increase of fluids is called exudation. The exudate brings immune bodies (antibodies) and special enzymes, and also helps in the removal of dead bacteria, destroyed tissue cells, and blood cells. The four classic symptoms of inflammation are redness (rubor), swelling (tumor), heat (calor), and pain (dolor). Loss of function of the affected part may also occur.

**inflection point**

A point on a curve such that the following are true: (a) the curve changes from concave to convex, (b) the mathematical derivative of the curve is increasing on one side of the point and decreasing on the other side, and (c) the second derivative changes sign.

**in-flight survey (IFS)**

The in-flight survey is administered to United States (U.S.) and foreign travelers departing the U.S. as a means of providing data on visitor characteristics, travel patterns and spending habits, and for supplying data on the U.S. international travel dollar accounts as well as to meet balance of payments estima-

tion needs. The IFS covers about 70% of U.S. carriers and 35% of foreign carriers who voluntarily choose to participate.

**inflow**

Entry of extraneous rain water into a sewer system from sources other than infiltration, such as basement drains, manholes, storm drains, and street washing.

**influent**

Water, wastewater, or other liquid flowing into a reservoir, basin, or treatment plant.

**influenza**

An acute infectious epidemic disease caused by a filterable virus. Four main types of the virus have been recognized, arbitrarily labeled by researchers as types A, B, C, and D, and sometimes subdivided into A<sub>1</sub> and A<sub>2</sub>. The A<sub>2</sub> virus is a comparatively new strain that first emerged in 1957. The disease it produces is often called the Asian flu. Influenza has a brief incubation period. The symptoms appear suddenly and though the virus enters the respiratory tract it soon affects the entire body. The symptoms include fever, chills, headache, sore throat, cough, gastrointestinal disturbances, muscular pain, and neuralgia.

**informal contract**

A contract that does not require a specified form or formality for its validity. Generally refers to an oral contract as contrasted with a written contract or specialty instrument.

**informal factory visit**

A visit by Coast Guard personnel to a manufacturing facility to acquaint the manufacturer with the existence of the law, regulations, general administrative requirements affecting him/her, and possible penalties for violations.

**informal rulemaking**

Also known as *notice and comment rulemaking*, requires OSHA provide "interested parties an opportunity to participate in the rulemaking through submission of written data, views, or arguments with or without opportunity for oral presentation." It does not require a hearing, although OSHA may hold one if it so desires. It allows the agency to look beyond any hearing records in making rules. Also, when courts review OSHA's actions under informal rulemaking, OSHA is not held to the "substantial evidence" test required under formal proceedings. Rather, the agency

must only prove that their decisions and determinations are not "arbitrary" or "capricious."

**information**

(1) A meaningful collection of facts, figures, and/or data. (2) That which reduces uncertainty; typical unit is the *bit*.

**information aid**

Any work aid which provides the worker with text, numbers, figures, or other details appropriate for performing in the working environment.

**information area**

Any region of a display containing useful general-purpose information.

**information file**

In the Superfund program, a file that contains accurate, up-to-date documents on a Superfund site. The file is usually located in a public building such as a school, library, or city hall that is convenient for local residents.

**information ordering**

The ability to correctly follow a set of rules in arranging items.

**information process analysis**

*See form process chart.*

**information request**

*Aviation.* A request originated by an Flight Service Station (FSS) for information concerning an overdue Visual Flight Rules (VFR) aircraft.

**information theory**

That aspect of communications dealing with the coding of messages and with the content and amount of information conveyed. *See also information and bit.*

**informed consent**

A person's agreement to allow something to happen (such as surgery) that is based on a full disclosure of the facts needed to make the decision intelligently. *See also voluntary informed consent.*

**informer's privilege**

The government's privilege to withhold from disclosure the identity of persons who furnish information on violations of the law to officers charged with the enforcement of that law.

**infra-**

*(prefix)* Under, below, or less than.

**infradian rhythm**

A biological rhythm having less than one cycle per day, or a period longer than one day.

**infrared**

Electromagnetic radiation of wavelength between the longest visible red (7000 Angstroms or  $7 \times 10^{-4}$  millimeter) and about 1 millimeter.

**infrared detector**

A measurement technique in which infrared radiation is passed through a cell containing the sampled material. The absorption of the IR energy at a wavelength which coincides with the absorption band of the analyte (contaminant) and it's proportional to the amount of contaminant present. This principle can also be applied to the determination of materials present in air drawn through a cell through which a beam of IR radiation is passed.

**infrared gas analyzer**

A real-time air sampling device that measures the absorbency of inorganic and organic gases and vapors.

**infrared hygrometer**

*See hygrometer.*

**infrared lamp**

A lamp which emits its primary radiation in the infrared portion of the electromagnetic spectrum, and any radiation in the visible portion of the spectrum is not normally of interest.

**infrared radiation**

Electromagnetic radiation with wavelengths between about 0.7 and 1000  $\mu\text{m}$ . This radiation is longer than visible radiation but shorter than microwave radiation.

**infrared radiometer**

An instrument designed to measure the intensity of infrared radiation emitted by an object. Also called *infrared sensor*.

**infrared sensor**

*See infrared radiometer.*

**infrared touchscreen**

A display having a frame with embedded infrared transmitters and receivers which uses blockage of the infrared beam to indicate a touch location.

**infrasonic**

At a frequency below the audio frequency range. Also called *subsonic*.



**infrasound**

A mechanical vibration at frequencies below those normally heard by the human ear, generally below about 16 to 20 Hz. *See also infrasonic.*

**infrastructure**

(1) In transit systems, all the fixed components of the transit system, such as rights-of-way, tracks, signal equipment, stations, park-and-ride lots, bus stops, maintenance facilities. (2) In transportation planning, all the relevant elements of the environment in which a transportation system operates.

**infusion**

(1) Steeping of a substance in water to obtain its soluble principles. (2) A solution obtained by steeping a substance in water. (3) The introduction of a solution into a vein by gravity. (Note: an *infusion* flows by gravity, an *injection* is forced in by a syringe, an *instillation* is dropped in, an *insufflation* is blown in, and an *infection* slips in unnoticed.)

**Ingersoll glaremeter**

An early instrument for measuring gloss using polarized light.

**ingestant**

A substance capable of entering the body through the mouth or digestive system.

**ingestion**

(1) The process of taking substances into the body by mouth. (2) The taking in of substances, especially via the mouth.

**ingredient statement**

Under the Federal Insecticide, Fungicide, and Rodenticide Act: A statement which contains a) the name and percentage of each active ingredient, and the total percentage of all inert ingredients, in the pesticide; and b) if the pesticide contains arsenic in any form, a statement of the percentages of total and water-soluble arsenic, calculated as elementary arsenic.

**ingress**

To enter a region or space. The right or act of entering.

**ingress point**

The location for entering a region or space.

**ingrown nail**

An overlapping of the anterior corners of a nail by the flesh of the digit, causing pain, inflammation, and possible infection. The condition occurs most frequently in the great toe, and is often caused by pressure from tight-fitting shoes. Another common cause is improper cutting of the toenails, which should be cut straight across or with a curved toenail scissors so that the sides are a little longer than the middle.

**inguinal**

Pertaining to the groin.

**inguinal crease**

The groove at the junction of the anterior-medial thigh and the torso.

**inguinal hernia**

Hernia occurring in the groin; protrusion of intestine or omentum, or both, either directly through a weak point in the abdominal wall (direct inguinal hernia) or downward into the inguinal canal (indirect inguinal hernia).

**inhalable dust**

*See respirable dust.*

**inhalable fraction**

The mass fraction of total airborne particulates that is inhaled through the nose and mouth.

**inhalant**

(1) A substance which is inhaled. (2) A gaseous substance that is or may be taken into the body by way of the nose and trachea (through the respiratory system).

**inhalation**

The breathing in of a substance, such as air or a contaminant in the atmosphere.

**inherent defect**

Fault or deficiency in a thing, no matter the use made of such, which is not easily discoverable and which is fixed in the object itself and not from without.

**inherent delay**

*See delay time.*

**inherent right**

One which abides in a person and is not given from something or someone outside itself. A right which a person has because he/she is a person.

**inhibit**

An independent and verifiable mechanical and/or electrical device that prevents a hazardous event from occurring. The device has direct control and is not the monitor of such a device.

**inhibitor**

An agent that arrests or slows chemical action or a material used to prevent or retard rust or corrosion.

**inion**

The most posterior protuberance of the occipital bone. Also referred to as *external occipital protuberance*.

**initial approach fix**

*Aviation*. The fixes depicted on instrument approach procedure charts that identify the beginning of the initial approach segment(s).

**initial approach segment**

*Aviation*. That segment of an instrument approach procedure between the initial approach fix and the intermediate approach fix or, where applicable, the final approach fix or point.

**initial crack size**

A crack dimension determined by nondestructive examination methods or proof test logic.

**initial flaw**

A flaw in a structural material before the application of load and/or environmental stressors.

**initial impact point**

*Transit*. The first impact point that produced property damage or personal injury, regardless of "first" or "most harmful event."

**initial luminance**

That luminance reaching the work surface from a given luminaire when new.

**initial terminal**

*Rail Operations*. The starting point of a locomotive for a trip.

**initiate**

To begin something. Also, a mental activity preceding a psychomotor task.

**initiation**

An irreversible genetic change in the cell, which is believed to be the first stage in the development of cancer.

**initiator**

Includes low voltage electroexplosive devices and high voltage exploding bridge wire devices.

**injection**

(1) Introduction of a fluid substance into the body, usually by means of a syringe or other device connected to a hollow needle. (2) The solution so administered.

**injection well**

A well into which fluids are injected for purposes such as waste disposal, improving the recovery of crude oil, or solution mining.

**injection zone**

A geological formation, group of formations, or part of a formation receiving fluids through a well.

**injunction**

A type of court order compelling a party in civil litigation to do something or not to do something. Thus, injunctions are usually *mandatory* or *prohibitory*, or a combination of both. There are three types of injunctions: the *temporary restraining order*, the *preliminary injunction*, and the *permanent injunction*.

**injure**

(1) To violate the legal right of another or inflict an actionable wrong. (2) To do harm, damage, or impair. (3) To hurt or wound, as the person; to impair the soundness of, as health.

**injurious exposure**

Such an exposure as will render the employer liable for occupational disease of the employee. For example, a concentration of a toxic material which would be sufficient to cause disease in the event of prolonged exposure to such concentration regardless of the length of exposure required to actually cause the disease.

**injury**

(1) Physical harm or damage to a person. (2) An incident involving lost time or other than on-site medical treatment. (3) Bodily injury resulting from a motor vehicle accident. To qualify as an "injury," the injured person must require and receive medical treatment away from the accident scene. (4) Harm to a person resulting from a single event, activity, occur-

rence, or exposure of short duration. (5) Any physical damage or harm to a person requiring medical treatment, or any physical damage or harm to a person reported at the time and place of occurrence. For employees, an injury includes incidents resulting in time lost from duty or any definition consistent with a transit agency's current employee injury reporting practice. (6) Physical harm or damage to the body resulting from an exchange, usually acute, of mechanical, chemical, thermal, or other environmental energy that exceeds the body's tolerance. (7) Any physical disturbance to, damage to, or destruction of one or more body structures which prevents/impairs normal functioning or appearance. (8) Any wrong or damage done to another, either in his/her person, rights, reputation, or property. The invasion of any legally protected interest of another. (9) A specific impairment of body structure or function caused by an outside agent or force, which may be physical, chemical, or psychic.

**injury accident**

An accident for which at least one injury, but no fatalities, were reported.

**injury crash**

A police-reported crash that involves a motor vehicle in transport on a traffic-way in which no one died but at least one person was reported to have a) an incapacitating injury; b) a visible but not incapacitating injury; c) a possible, not visible injury; or d) an injury of unknown severity.

**injury incident rate**

The number of injuries experienced by a company based on a year's work for 100 full-time employees

**injury index**

*NTSB*. Refers to the highest degree of personal injury sustained as a result of the accident.

**injury potential**

A potential difference across a membrane, generally of about 30-40 mv, between regions of normal and injured tissue.

**injury rate**

The average number of nonfatal injuries per accident or per one hundred accidents.

**injury severity**

*Transportation*. The police-reported injury severity of the occupant, pedestrian, or pedalcyclist (e.g., severe or fatal; killed or incapacitating; minor or moderate; evident, but not incapacitating; complaint of injury; injured, severity unknown; no injury).

**inland**

Means transit to and from inland ports connected by water routes made navigable by one or more lock structures.

**inland and coastal channels and waterways**

These terms include the Atlantic Coast Waterways, the Atlantic Intracoastal Waterway, the New York State Barge Canal System, the Gulf Coast Waterways, the Gulf Intracoastal Waterway, the Mississippi River System (including the Illinois Waterway), Pacific Coast Waterways, the Great Lakes, and all other channels (waterways) of the United States, exclusive of Alaska, that are usable for commercial navigation.

**inland area**

The area shoreward of the boundary lines defined in 46 CFR 7, except that in the Gulf of Mexico, it means the area shoreward of the lines of demarcation (COLREG lines) defined in 33 CFR 80.740-80.850. The inland area does not include the Great Lakes.

**inland bill of lading**

A bill of lading used in transporting goods overland to the exporter's international carrier. Although a through bill of lading can sometimes be used, it is usually necessary to prepare both an inland bill of lading and an ocean bill of lading for export shipments.

**inland carrier**

A transportation line that hauls export or import traffic between ports and inland points.

**inland marine insurance**

Originally, a form of insurance protection for goods transported other than on the ocean. Now, the term applies to a variety of coverage on floating personal property and to general liability as a bailee. *See also* [insurance](#).

**inland navigation facility**

*Aviation*. A navigation aid on a North American Route at which the common route and/or the non-common route begins or ends.

**inland waters of the United States**

Those waters of the United States lying inside the baseline from which the territorial sea is measured and those waters outside such baseline which are a part of the Gulf Intra-coastal Waterway. *See also inland waterway of the United States.*

**inland waterway convoy**

One or more non-powered inland waterways transport (IWT) vessels which are towed or pushed by one or more powered IWT vessels.

**inland waterway journey**

Any movement of an inland waterways transport (IWT) vessel from a specified point of origin to a specified point of destination.

**inland waterway of the United States**

Any improved waterway, the improvements to which are primarily for the use of vessels other than ocean going vessels. *See also inland waters of the United States.*

**inland waterway transport (IWT)**

Any movement of goods and/or passengers using an IWT vessel on a given inland waterways network.

**inland waterways cabotage transport**

National inland waterways transport (IWT) performed by an IWT vessel registered in another country.

**inland waterways fleet**

Number of inland waterways transport (IWT) vessels registered at a given date in a country and authorized to use inland waterways open for public navigation.

**inland waterways on national territory traffic**

Any movement of an inland waterways transport (IWT) vessel within a national territory irrespective of the country in which the vessel is registered.

**inland waterways passenger**

Any person who makes a journey on board of an inland waterways transport (IWT) vessel. Service staff assigned to IWT vessels are not regarded as passengers.

**inland waterways passenger-kilometer**

Unit of measure representing the transport of one passenger by inland waterway over one kilometer.

**inland waterways passenger transport link**

The combination of the place of embarkment and the place of disembarking of the passenger conveyed by inland waterways whichever itinerary is followed.

**inland waterways traffic**

Any movement on an inland waterways transport (IWT) vessel on a given network.

**inland waterways transit**

Inland waterways transport (IWT) through a country between two places (a place of loading and a place of unloading) both located in another country or in other countries provided the total journey within the country is by an IWT vessel and that there is no loading and unloading in that country.

**inland waterways transport (IWT) enterprise**

An enterprise carrying out in one or more places activities for the production of IWT services using IWT vessels and whose main activities according to the value added are inland waterway transport and services allied to inland waterway transport.

**inland waterways transport (IWT) freight vessel**

A vessel with a carrying capacity of not less than 20 tons designed for the carriage of freight by navigable inland waterways.

**inland waterways transport (IWT) passenger vessel**

Vessel designed exclusively or primarily for the public carriage or passengers by navigable inland waterways.

**inland waterways transport (IWT) vessel**

A floating craft designed for the carriage of goods or public transport of passengers by navigable inland waterways.

**inland zone**

The environment inland of the coastal zone excluding the Great Lakes, Lake Champlain, and specified ports and harbors on inland rivers. The term inland zone delineates an area of federal responsibilities for response actions. Precise boundaries are determined by agreements between the Environmental Protection Agency (EPA) and the United States Coast Guard (USCG) and are identified in Federal Regional Contingency Plans.

**inlet**

An opening of the sea into the land or of a lake into its shore.

**INM**

See *Integrated Noise Model*.

**INMARSAT**

See *International Maritime Satellite Organization*.

**innage**

The height of a liquid in a tank from the bottom datum plate of the tank to the liquid surface.

**innate**

Due to one's genetic make-up.

**innavigable**

(1) As applied to streams, not capable of or suitable for navigation; impassable by ships or vessels. (2) As applied to vessels in the law of maritime insurance, it means unfit for navigation; so damaged by misadventures at sea as to be no longer capable of making a voyage.

**inner-approach obstacle free zone**

*Aviation*. The inner-approach obstacle free zone (OFZ) is a defined volume of airspace centered on the approach area. The inner-approach OFZ applies only to runways with an approach lighting system. The inner-approach OFZ begins 200 feet from the runway threshold at the same elevation as the runway threshold and extends 200 feet beyond the last light unit in the approach lighting system. The width of the inner approach OFZ is the same as the runway OFZ and rises at a slope of 50 (horizontal) to 1 (vertical) from the beginning. See also *obstacle free zone*.

**inner ear**

That portion of the ear embedded in the temporal bone and consisting of the vestibule, cochlea, and semicircular canals. Also referred to as the *internal ear* or the *labyrinth*.

**inner marker (IM)**

*Aviation*. A marker beacon used with an Instrument Landing System (ILS) (CAT II) precision approach located between the middle marker and the end of the ILS runway, transmitting a radiation pattern keyed at six dots per second and indicating to the pilot, both aurally and visually, that he is at the

designated decision height (DH), normally 100 feet above the touchdown zone elevation, on the ILS CAT II approach. It also marks progress during a CAT III approach. See also *outer marker*.

**inner packaging**

*DOT*. A packaging for which an outer packaging is required for transport. It does not include the inner receptacle of a composite packaging.

**inner receptacle**

*DOT*. A receptacle which requires an outer packaging in order to perform its containment function. The inner receptacle may be an inner packaging of a combination packaging or the inner receptacle of a composite packaging.

**inner-transitional obstacle free zone**

*Aviation*. The inner transitional surface obstacle free zone (OFZ) is a defined volume of airspace along the sides of the runway and inner-approach OFZ and applies only to precision instrument runways. The inner-transitional surface OFZ slopes 3 (horizontal) to 1 (vertical) out from the edges of the runway OFZ and inner-approach OFZ to a height of 150 feet above the established airport elevation. See also *obstacle free zone*.

**innervation**

The distribution of nerves or neurons to all or some portion of the body.

**innocent**

The term applied to a defendant in a criminal prosecution who is determined to be not guilty. More loosely applied to persons who did not know or have reason to know about a violation or problem, such as an innocent landowner ignorant of real estate contamination.

**innocent purchaser**

One who, by an honest contract or agreement, purchases property or acquires an interest therein, without knowledge, or means of knowledge sufficient to charge him/her in law with knowledge, of any infirmity in the title of the seller.

**innocuous**

Harmless, or having no adverse effects.

**innominate bone**

See *coxal bone*.

**inoculation**

(1) Introduction of pathogenic microorganisms into the body to stimulate the production of antibodies and immunity. (2) Introduction of infectious material into culture medium in an effort to produce growth of the causative organism.

**inoculum**

(1) Bacterium placed in compost to start biological action. (2) A medium containing organisms which is introduced into cultures of living organisms.

**inorganic**

(1) Having no organs. (2) Not of organic origin.

**inorganic chemicals**

Chemical substances of mineral origin, not basically of carbon structure.

**inorganic compound**

Chemical compounds of mineral origin, not of basically carbon structure.

**input**

That information, signal, or form of energy which enters a system.

**input device**

Any piece of equipment or instrumentation used to provide the human with an interface for providing input to a system.

**input/output (I/O)**

Any activity which inputs to or receives output from a computer.

**input point**

The physical location at which some information or signal can enter some system.

**input storage**

The temporary placement of data in a computer file until time for processing.

**inquest**

The inquiry by a medical examiner or coroner, sometimes with the aid of a jury, into the manner of the death of any one who has been killed, or has died suddenly under unusual or suspicious circumstances, or by violence, or while in prison.

**inrolling nip point**

A system in which two or more rollers rotate parallel to each other, but in opposite directions, and which can grab and pull on such items as loose clothing, and ties.

**insanity**

Severe mental disorder that may make a person irresponsible, unreasonable, and unable to function normally in society. His/her thoughts and actions are distinctly different from accepted patterns of behavior. The term is a legal rather than a medical one, and includes different kinds of mental illness. A person who is judged to be insane by a court is not held legally responsible for his/her actions and may have to be institutionalized.

**insect**

Any of the numerous small invertebrate animals generally having the body more or less obviously segmented, for the most part belonging to the class insecta, comprising six-legged, usually winged forms, as for example, beetles, bugs, bees, flies, and other allied classes of arthropods whose members are wingless and usually have more than six legs, as for example, spiders, mites, ticks, centipedes, and wood lice.

**insecticide**

A pesticide compound specifically used to kill or control the growth of insects.

**insert**

To place one object inside another.

**insertion mode**

A data entry mode in which text or information entered by the user is placed in front of any existing text or information, shifting that existing text.

**inshore traffic zone**

A designated area between the landward boundary of a traffic separation scheme and the adjacent coast, intended for local traffic.

**inside-out display**

Any display which uses a vehicle as the frame of reference such that the display reflects the way the operator would see the external environment from inside.

**inside work**

(1) That work performed inside some structure which shields the worker at least in part from the atmosphere elements. Also referred to as *indoor work*. (2) See *internal work*.

**insidious**

Spreading in a subtle manner.



**insolation**

The incoming solar radiation that reaches the earth and the atmosphere.

**insoluble**

Incapable of being dissolved.

**insoluble wastes**

Solid wastes consisting of inert natural minerals or inert synthetic materials.

**insomnia**

An extended period in which sleep is disturbed, not resulting from immediate external stimuli. The causes of insomnia may be physical or psychological or, most often, a combination of both. Some persons are more sensitive to conditions around them than others, and may be kept awake by slight noises, light, or the sharing of their bed. Beverages that contain caffeine, such as coffee, tea, and cola drinks, keep people awake. A heavy meal shortly before bedtime may prevent sleep. Drinking large quantities of fluids may cause an uncomfortable feeling of distention of the bladder.

**insorption**

Movement of a substance into the blood, especially from the gastrointestinal tract into the circulating blood.

**inspect**

To verify quality, integrity, and/or safety through testing, observation, or other processes.

**inspection**

(2) *General*. Visual examination for detection of features or qualities perceptible to the eye. (2) *OSHA*. Any investigation of an employer's factory, plant, establishment, construction site, or other area, workplace, or environment where work is performed by an employee of an employer, and includes reinspection, follow-up inspection, accident investigation, or other inspection conducted under Section 8(a) of the Occupational Safety and Health Act. (3) *Law*. To examine; scrutinize; investigate; look into; check over; or view for the purpose of ascertaining the quality, authenticity, or conditions of an item, product, document, residence, business, etc.

**inspection and maintenance**

(1) Activities to assure proper emissions-related operation of mobile sources of air

pollutants, particularly automobile emissions controls. (2) Also applies to wastewater treatments plants and other anti-pollution facilities and processes.

**inspection and weighing services for motor vehicle transport facility**

Establishments primarily engaged in the operation of fixed facilities for motor vehicle transportation, such as toll roads, highway bridges, and other fixed facilities, except terminals.

**inspection error**

Any incorrect reading, action, or other error of either omission or commission in the inspection process.

**Inspection Register**

A registration containing the name of each establishment scheduled for inspection and the order in which these establishments will be inspected. Compiled from the establishment list and the industry rank report. *See also establishment list and industry rank report.*

**inspection searches**

Administrative searches conducted by local or state authorities for health or building law enforcement must be based on a warrant issued on probable cause. A warrant is likewise required for inspection of business premises by OSHA inspectors. An exception to the warrant requirement is in cases involving closely regulated industries where the commercial operator's privacy interest is adequately protected by detailed regulatory schemes authorizing inspections without warrants.

**Inspirable Particulate Mass**

Particulates that are hazardous when deposited anywhere in the respiratory tract.

**Inspirable Particulate Mass TLVs (IPM-TLVs)**

Exposure limits that are applied to those materials that are hazardous when deposited anywhere in the respiratory tract.

**inspiration**

The process of drawing air into the lungs.

**inspiratory capacity (IC)**

The maximum volume of air which can be inhaled after a normal expiration.

**inspiratory reserve volume (IRV)**

The maximum volume of air that can be forcibly expired following a normal inspiration.

**inspire**

Breathe or take air into the lungs, using one's own resources.

**instant start fluorescent lamp**

A fluorescent lamp which does not require preheating of the electrodes. Also referred to as cold start fluorescent lamp.

**instantaneous acceleration**

The rate of velocity change with time at any instant.

**instantaneous velocity**

The rate of change of displacement with time at any instant.

**instep**

The arch on the medial side of the foot.

**instep circumference**

The surface distance around the foot in a coronal/frontal plane at the anterior junction of the leg and foot. Measured with the individual standing erect, having his weight distributed equally on both feet on the floor, and without any unnecessary leg or foot muscle tension.

**instep length**

The linear distance from the plane of the most posterior aspect of the heel to the point of maximum medial protuberance of the foot. Measured with the individual standing erect and the body weight equally distributed between both feet on the floor.

**instinct**

A genetically based or natural motivation or behavior.

**institutional solid waste**

Solid waste generated by educational, health care, correctional, and other institutional facilities.

**instruction**

One item of a set of procedures, standard practices, or steps for accomplishing a given task or job.

**instruction aid**

A job aid containing written instructions on a card or sheet of paper.

**instructional flying**

(1) *FAA*. Any use of an aircraft for the purpose of formal instruction with the flying instructor aboard, or with the maneuvers on the particular flight(s) specified by the flight instructor; excludes proficiency flying. (2) *NTSB*. Flying accompanied in supervised training under the direction of an accredited instructor.

**instrument**

(1) *General*. Any device for measuring, recording, and/or controlling the value of one or more variables. (2) *Aviation*. A device using an internal mechanism to show visually or aurally the attitude, altitude, or operation of an aircraft or aircraft part. It includes electronic devices for automatically controlling an aircraft in flight. (3) *Law*. A formal or legal document in writing, such as a contract, deed, will, bond, or lease.

**instrument approach**

*Aviation*. (1) An approach to an airport, with intent to land, by an aircraft flying in accordance with an Instrument Flight Rules (IFR) flight plan, when the visibility is less than 3 miles and/or when the ceiling is at or below the minimum initial altitude. (2) A series of predetermined maneuvers for the orderly transfer of an aircraft under instrument flight conditions from the beginning of the initial approach to a landing, or to a point from which a landing may be made visually. An instrument approach is prescribed and approved for a specific airport by competent authority Federal Aviation Regulation (FAR) Part 91.

**instrument approach procedure**

A series of predetermined maneuvers by reference to flight instruments with specified protection from obstacles from the initial approach fix, or where applicable, from the beginning of a defined arrival route to a point from which a landing can be completed and thereafter, if a landing is not completed, to a position at which holding or en route obstacle clearance criteria apply.

**instrument approach procedures charts**

Portrays the aeronautical data which are required to execute an instrument approach to an airport. These charts depict the proce-

dures, including all related data, and the airport diagram. Each procedure is designated for use with a specific type of electronic navigation system including nondirectional beacon (NDB), tactical aircraft control and navigation (TACAN), very high frequency omnidirectional range (VOR), instrument landing system/microwave landing system (ILS/MLS), and area navigation (RNAV). These charts are identified by the type of navigational aid(s) which provide final approach guidance.

**instrument error**

Any error made by an instrument. Such errors, if not discovered, can foul an experiment or test.

**instrument flight rules (IFR)**

Rules governing the procedures for conducting instrument flight. Also a term used by pilots and controllers to indicate type of flight plan.

**instrument flight rules (IFR) aircraft**

An aircraft conducting flight in accordance with instrument flight rules (IFR).

**instrument flight rules (IFR) aircraft handled**

The number of instrument flight rules (IFR) departures multiplied by two plus the number of IFR overs. This definition assumes that the number of departures (acceptances, extensions, and originations of IFR flight plans) is equal to the number of landings (IFR flight plans closed).

**instrument flight rules (IFR) conditions**

Weather conditions below the minimum for flight under visual flight rules (VFR).

**instrument flight rules (IFR) departure**

An instrument flight rules (IFR) departure includes IFR flights originating in the center's area, accepted by the center under SOLE EN ROUTE clearance procedures, and extended by the center.

**instrument flight rules (IFR) over**

An instrument flight rules (IFR) flight that originates outside the Air Route Traffic Control Center (ARTCC) area and passes through the area without landing.

**instrument flight rules (IFR) over-the-top**

With respect to the operation of aircraft, means the operation of an aircraft over-the-top on an instrument flight rules (IFR) flight plan when cleared by air traffic control to

maintain "visual flight rules (VFR) conditions" or "VFR conditions on top."

**instrument flight rules (IFR) takeoff minimums and departure procedure**

Federal Aviation Regulations, Part 91, prescribes standard takeoff rules for certain civil users. At some airports, obstructions or other factors require the establishment of nonstandard takeoff minimums, departure procedures, or both to assist pilots in avoiding obstacles during climb to the minimum en route altitude. Those airports are listed in National Airspace System (NAS) Department of Defense (DOD) Instrument Approach Plate (IAP) Charts (Ws) under a section entitled "IFR Takeoff Minimums and Departure Procedures." The IAP chart legend illustrates the symbol used to alert the pilot to nonstandard takeoff minimums and departure procedures. When departing Instrument Flight Rules (IFR) from such airports or from any airports where there are no departure procedures, standard instrument departures (SIDs), or Air Traffic Control (ATC) facilities available, pilots should advise ATC of any departure limitations. Controllers may query a pilot to determine acceptable departure directions, turns, or headings after takeoff. Pilots should be familiar with the departure procedures and must assure that their aircraft can meet or exceed any specified climb gradients.

**Instrument Flight Service Station (IFSS)**

A central operations facility in the flight advisory system, staffed and equipped to control aeronautical point-to-point telecommunications, and air-ground telecommunications with pilots operating over international territory or waters, which provides flight plan following, weather information, search and rescue action, and other flight assistance operations.

**Instrument Landing System (ILS)**

A precision instrument approach system which normally consists of the following electronic and visual aids a) localizer provides course guidance to the runway; b) glide slope provides vertical guidance during approach; c) marker beacon provides aural and/or visual identification of a specific position along an instrument approach landing.

**instrument landing system category**

*ILS Category I.* An ILS approach procedure which provides for approach to a height above touchdown of not less than 200 feet and with runway visual range of not less than 1,800 feet. *ILS Category II.* An ILS approach procedure which provides for approach to a height above touchdown of not less than 100 feet and with runway visual range of not less than 1,200 feet. *ILS Category III.* a) IIIA: An ILS approach procedure which provides for approach without a decision height minimum and with runway visual range of not less than 700 feet. b) IIIB: An ILS approach procedure which provides for approach without a decision height minimum and with runway visual range of not less than 150 feet. c) IIIC: An ILS approach procedure which provides for approach without a decision height minimum and without runway visual range minimum.

**instrument meteorological conditions (IMC)**

Meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling less than the minima specified for visual meteorological conditions.

**instrument operation**

Arrivals or departures of an aircraft in accordance with an instrument flight rules (IFR) flight plan or special visual flight rules (SVFR) procedures or an operation where IFR separation between aircraft is provided by a terminal control facility. There are three kinds of instrument operations: a) *Primary Instrument Operations.* Arrivals and departures at the primary airport which is normally the airport at which the approach control facility is located. b) *Secondary Instrument Operations.* Arrivals and departures at all the secondary airports combined. c) *Overflights.* Operations in which an aircraft transits the area without intent to land.

**instrument operations**

Arrivals or departures of an aircraft in accordance with an IFR flight plan or special VFR procedures or an operation where IFR separation between aircraft is provided by a terminal control facility.

**instrument practice approach**

An instrument approach procedure conducted by a visual flight rules (VFR) or an instrument flight rules (IFR) aircraft for the purpose of pilot training or proficiency demonstrations.

**instrument runway**

A runway equipped with electronic and visual navigation aids for which a precision or non-precision approach procedure having straight-in landing minimums has been approved.

**instrument shelter**

A box-like wooden structure designed to protect weather instruments from direct sunshine and precipitation.

**Instrument Society of America (ISA)**

A group that sets standards of performance for instruments made and used in the United States.

**instrumental activities of daily living (IADL)**

Those functions likely to be carried out on a daily basis which involve the use of equipment or instrumentation for sustenance of the individual or a normally habitable environment. *See also activities of daily living and daily living tasks.*

**instruments of international traffic**

Lift vans, cargo vans, shipping tanks, skids, pallets, caul boards, and cores for textile fabrics, arriving (whether loaded or empty) in use or to be used in the shipment of merchandise in international traffic.

**insubordination**

The state of being insubordinate; disobedience to constituted authority. Refusal to obey some order which a superior officer is entitled to give and have obeyed. The term implies willful or intentional disregard of the lawful and reasonable instructions of an employer.

**insulated body**

*Transit.* Truck or trailer designed for transportation of commodities at controlled temperatures. It may be equipped for refrigeration or heating.

**insulated conductor**

*See conductor.*

**insulated rail joint**

*Rail Operations.* A joint in which electrical insulation is provided between adjoining rails.

**insulation value of clothing**

*See thermal insulation value of clothing.*

**insulin**

A sulfur-containing hormone produced by the pancreas of vertebrates. This hormone stimulates the conversion of glucose to glyco-

gen and fat. An insulin deficiency results in excess blood sugar and causes the condition *diabetes mellitus*. Various preparations of insulin are used in the treatment of this illness. Types of insulin vary in the rapidity of action and the duration of effectiveness. Regular insulin is effective almost immediately after injection and reaches its peak of action within 2 hours. It is used most often in diabetic emergencies and in regulating dosage for a patient when diabetes is first diagnosed. Crystalline insulin is made of zinc-insulin crystals and is usually given to patients who are allergic to regular insulin. Other types of insulin contain substances that prolong the action of insulin. Protamine zinc insulin (PZI), isophane insulin (NPH), globin zinc insulin, and insulin lente are examples of long-acting preparations of insulin.

### **insurance**

(1) A contract whereby, for a stipulated consideration, one party undertakes to compensate the other for loss on a specified subject by specified perils. The party agreeing to make the compensation is usually called the *insurer* or *underwriter*; the other, the *insured* or *assured*; the agreed consideration is the *premium*; the written contract, a *policy*; the events insured against, *risks* or *perils*; and the subject, right, or interest to be protected, the *insurable interest*. (2) A contract whereby one undertakes to indemnify another against loss, damage, or liability arising from an unknown or contingent event and is applicable only to some contingency or act to occur in the future. (3) An agreement by which one party for a consideration promises to pay money or its equivalent or to do an act valuable to another party upon destruction, loss, or injury of something in which the other party has an interest.

### **insured and principal**

*Transportation.* The motor carrier named in the policy of insurance, surety bond, endorsement, or notice of cancellation, and also the fiduciary of such motor carrier.

### **intake**

A measure of exposure expressed as the mass of substance in contact with the exchange boundary per unity body weight per unit time (e.g., mg/kg-day). Also referred to as the *normalized exposure rate*.

### **intangible risk**

A risk involving unwanted consequences which are primarily nonphysical, such as public opinion, employee morale, etc., but may still have adverse effects.

### **integral absorbed dose**

The energy imparted to matter by ionizing particles. The unit of measure is the gram-rad and is equal to 100 ergs.

### **integral mode controller**

A type of controller whose output signal is proportional to the integral of the error signal.

### **integrate**

(1) To compute the area under a curve. (2) To combine activities, information, or objects in a meaningful way for some purpose.

### **integrated carriers**

Carriers that have both air and ground fleets; or other combinations, such as sea, rail, and truck. Since they usually handle thousands of small parcels an hour, they are less expensive and offer more diverse services than regular carriers.

### **integrated circuit**

A small chip of silicon on which miniaturized circuits have been etched.

### **integrated controller**

A device which coordinates the control of more than one aspect of some operation.

### **integrated electromyogram (IEMG)**

The computed area under the curve of an electromyographic signal.

### **integrated error**

The sum of the errors accumulated over a given task.

### **integrated gas company**

A company that obtains a significant portion of its gas operating revenues from the operations of both a retail gas distribution system and gas transmission system. An integrated company obtains less than 90 percent but more than 10 percent of its gas operating revenues from either its retail or transmission operations or does not meet the classification of mains established for distribution.

### **Integrated Noise Model (INM)**

*Aviation.* A computer modeling system used by the Federal Aviation Administration

(FAA) to develop noise contours for airports and surrounding areas.

**integrated pest management (IPM)**

A mixture of pesticide and non-pesticide methods to control pests.

**Integrated Risk Information System (IRIS)**

An EPA database containing verified RfDs, slope factors, health risks, and EPA regulatory information for numerous chemicals. IRIS is EPA's preferred source for toxicity information for Superfund.

**integrated tow**

Barges designed to fit together so the underwater configuration is the equivalent of a single hull of a motorized vessel. This eliminates water turbulence and increases efficiency.

**integrated transportation**

See *intermodalism* (3).

**intellect**

The capacity for understanding and reasoning.

**intelligence**

The ability to recognize, learn, understand, reason, create, and react appropriately to a given set of living conditions. It is a general term for the practical functioning of the mind. It is basically a combination of reasoning, memory, imagination, and judgement. Each of these faculties relies upon the others. The brain may store up many memories, but they are useful only when brought to surface consciousness at the right time and in the right connection. Imagination is the faculty of associating several memories (e.g., facts, images, sensations, etc.) to produce another fact or image. In general, the more efficiently the brain combines memories in an orderly fashion, the greater the intelligence. Imagination, however, must be governed by reason and judgement. Reason is the ability to draw logical conclusions by relating memories and observations. Judgement relies on experience to choose between different forms of reasoning. All these factors are controlled by the cerebral cortex.

**intelligence quotient (IQ)**

A numerical score attributed to be one's intelligence level, typically the value of the ratio of mental age to chronological age, multiplied

by 100. (Generally of limited value.) Expressed as:

$$IQ = \frac{\text{mental age}}{\text{chronological age}} \times 100$$

**intelligence test**

Any of a set of standardized tests which purport to measure an individual's intelligence.

**Intelligent Vehicle Highway System**

A planned passenger car highway system in which the routine driving, safety, and navigation functions are assumed by integrated computer systems.

**intensity**

(1) *General*. A measure of the strength or amount of some entity or sensation. (2) *Radiation*. The energy of any radiation incident upon (or flowing through) a unit area, perpendicular to the radiation beam, in a unit of time. (3) *Seismology*. A measure of the effects at a particular place by shaking during an earthquake (not to be confused with *magnitude*). It is a measure of the "strength" of shaking experienced in an earthquake. The Modified Mercalli Scale represents the local effect or damage caused by an earthquake; the "intensity" reported at different points generally decreases away from the earthquake epicenter. The intensity range, from I to XII, is expressed in Roman numerals. For example, an earthquake of intensity II barely would be felt by people favorably situated, while intensity X would produce heavy damage, especially to unreinforced masonry. Local geological conditions strongly influence the intensity of an earthquake. Commonly, sites on soft ground or alluvium have intensities 2 to 3 units higher than sites on bedrock. See also *magnitude*.

**intentionally**

To do something purposely, and not accidentally.

**interaction**

The result from a particular combination of events, due solely to the combination and not any particular individual event.

**interaction effect**

That experimental or statistical result attributable solely to a particular combination of variables and beyond that which can be predicted from the variables independently.



**interactive**

Having the capability for one or more cycles of human input with rapid display feedback.

**interactive corporate compliance**

The theory that self-regulation can supplement, and even replace some of the command and control style of corporate regulation by government. Involves using the competitive forces of the economy to produce a set of cooperative policies which can produce acceptable forms of business self-regulation to prevent industrial abuses before they require control by the government. *See also* [positive incentives](#), *carrot and stick approach* and *environmental leadership program*.

**interactive window**

An active window which is receptive to user input.

**Interagency Fleet Management System (IFMS)**

The organizational title assigned to the General Services Administrations (GSA) interagency fleet operation which encompasses the Central Office, Regional Offices, and all Fleet Management Centers and Fleet Management Subcenters.

**interaural phase**

The apparent relative phase difference of a tone between the left and right ears.

**intercept glideslope altitude**

The minimum altitude to intercept the glideslope or path on a precision approach. The intersection of the published intercept altitude with the glideslope/path, designated on Government charts by the lightning bolt symbol, is the precision final approach fix (FAF). However, when Air Traffic Control (ATC) directs a lower altitude, the resultant lower intercept position is then the FAF. *See also* [glideslope](#).

**interceptor sewer**

Large sewer lines that, in a combined system, control the flow of the sewage to the treatment plant. In a storm, they allow some of the sewage to flow directly into a receiving stream, thus preventing an overload by a sudden surge of water into the sewers. They are also used in separate systems to collect the flows from main and trunk sewers and carry them to treatment points.

**interchange**

An area designated to provide traffic access between roadways of differing levels.

**intercity and rural bus transportation**

Establishments primarily engaged in furnishing bus transportation, over regular routes and on regular schedules, the operations of which are principally outside a single municipality and its suburban areas.

**intercity bus**

(1) A bus with front doors only, high-backed seats, separate luggage compartments, and usually with restroom facilities for use in high-speed long-distance service. (2) A standard size bus equipped with front doors only, high-backed seats, luggage compartments separate from the passenger compartment and usually with rest room facilities, for high-speed long distance service.

**intercity passenger mile**

The distance generated by moving one passenger one mile on a trip between two cities.

**intercity rail passenger**

A rail car, intended for use by revenue passengers, obtained by the National Railroad Passenger Corporation (currently Amtrak<sup>®</sup>) for use in intercity rail transportation.

**intercity rail transportation**

Transportation provided by Amtrak<sup>®</sup>.

**intercity transportation**

(1) Transportation between cities. (2) Transportation service provided between cities by certified carriers, usually on a fixed route with a fixed schedule.

**intercity trucking**

Trucking operations which carry freight beyond the local areas and commercial zones.

**intercostal**

Between the ribs.

**interdigital crotch**

That region of soft tissue between each pair of digits on the hand or foot. The pair of digits being referred to should be specified when using this term.

**interest, long-term debt and capital leases**

Interest on all classes of debt, both short-term and long-term, as well as the amortization of premium, discount and expense connected

with the issuance of such debt and interest expense on capital leases.

**interested party**

For the purposes of administrative hearings, those who have a legally recognized private interest, and not simply a possible pecuniary benefit.

**interface**

A common boundary or point of connection between two or more parts of a system or between systems, whether physical or perceptual.

**interfacility**

*Aviation.* Between adjacent facilities; between Air Control Facility (ACF) and ACF, or between ACF and Air Traffic Control Tower (ATCT), as contrasted with intrafacility.

**interference**

An undesired positive or negative response caused by a substance other than the one being monitored. Substances that may be present in the atmosphere along with the contaminant of interest, which, when sampled, affect the reading of an instrument, detector tube, or in the analysis of the sample. Interference can be positive or negative, significant or insignificant, accounted for or unaccounted for, and generally must be considered when assessing an exposure situation.

**interference allowance**

That time compensation given a worker for lost production due to interference time.

**interference equivalent**

Mass or concentration of an interfering substance which gives the same measurement reading as a unit mass or concentration of the substance being measured.

**interference time**

(1) That machine idle time which results from an operator's inability to service one or more machines due to other assignments. (2) That worker idle time when working as a member of a team in which one or more members of the team are required to wait while some task is carried out by another member.

**interferon**

Low-molecular-weight protein produced by cells infected with viruses. It will block viral

infection of healthy cells and suppress viral multiplication in cells already infected.

**interreflection**

The multiple reflections of light from an enclosed volume other than the luminaire prior to reaching the surface of interest.

**Interglacial period**

A time interval of relatively mild climate during the Ice Age when continental ice sheets were absent or limited in extent to Greenland and the Antarctic.

**intergovernmental revenue**

Amounts received from other governments as fiscal aid in the form of shared revenues and grants-in-aid, as reimbursements for performance of general government functions and specific services for the paying government, or in lieu of taxes. This revenue excludes amounts received from other governments for sale of property, commodities, and utility services.

**interim (permit) status**

Period during which treatment, storage, and disposal facilities coming under RCRA in 1980 are temporarily permitted to operate while awaiting denial or issuance of a permanent permit. Permits issued under these circumstances are usually called Part A or Part B permits.

**inter-individual variation**

The differences between individuals on the same or equivalent aspect or variable.

**interior compartment door**

Any door in the interior of the vehicle installed by the manufacturer as a cover for storage space normally used for personal effects.

**interior hung scaffold**

A work scaffold suspended from the ceiling or roof structure.

**interior structural fire fighting**

The physical activity of fire suppression, rescue, or both inside of buildings or enclosed structures which are involved in a fire situation beyond the incipient stage.

**interlace**

Scan across a display screen or other medium such that the distance from line to line in a

field is approximately twice the line width, and adjacent lines belong to different fields.

**interlaced display**

A display which uses an interlaced scanning format such that two fields must be written to completely update the display.

**interlock**

An electrical or mechanical device for preventing the continued operation of an instrument if the interlock is not working, or the inactivation of an instrument/appliance, until a condition has been corrected to enable its safe operation.

**interlocked route**

*DOT.* A route within interlocking limits.

**interlocked switch**

A switch within the interlocking limits the control of which is interlocked with other functions of the interlocking.

**interlocking limits**

The tracks between the opposing home signals of an interlocking.

**interlocking machine**

An assemblage of manually operated levers or other devices for the control of signals, switches, or other units.

**interlocking signal**

A roadway signal which governs movements into or within interlocking limits.

**intermediary**

An arbitrator or mediator. A broker; one who is employed to negotiate a matter between two parties, and who for that purpose may be an agent of both.

**intermediate**

A chemical formed as a middle step in a series of chemical reactions, especially in the formation of organic compounds.

**intermediate approach segment**

*Aviation.* That segment of an instrument approach procedure between either the intermediate approach fix and the final approach fix or point, or between the end of a reversal, race track, or dead reckoning track procedure and the final approach fix or point, as appropriate.

**intermediate cuneiform bone**

One of the distal group of foot bones in the tarsus.

**intermediate fix (IF)**

*Aviation.* The fix that identifies the beginning of the intermediate approach segment of an instrument approach procedure. The fix is not normally identified on the instrument approach chart as an IF.

**intermediate grade gasoline**

An increasingly common grade of unleaded gasoline with an octane rating intermediate between "regular" and "premium." Octane boosters are added to gasoline to control engine pre-ignition or "knocking" by slowing combustion rates.

**intermediate infrared**

That portion of the infrared spectrum from about 1400 to 5000 nm.

**intermediate landing**

*Aviation.* On the rare occasion that this option is requested, it should be approved. The departure center, however, must advise the Air Traffic Control Command Center (ATCCC) so that the appropriate delay is carried over and assigned at the intermediate airport. An intermediate landing airport within the arrival center will not be accepted without coordination with and the approval of the ATCCC.

**intermediate product**

Under ISO 14000, input or output from a unit process which requires further transformation.

**intermediate type road surface**

Mixed bituminous and bituminous penetration (Surface/Pavement Type Codes 52 and 53).

**intermittent, casual, or occasional driver**

A driver who in any period of 7 consecutive days is employed or used as a driver by more than a single motor carrier. The qualification of such a driver shall be determined and recorded in accordance with the provisions of 49 CFR 391.63 or 391.65 as applicable.

**intermittent noise**

Noise which occurs intermittently or falls below the audible or measurable level one or more times over a given period.

**intermittent stream**

A stream, the flow of which in the state of nature is interrupted either from time to time during the year or at various places along its course, or both.

**intermittent work**

That work, often physically demanding, which is performed only at certain points in time, not on a continuous basis.

**intermodal**

Used to denote movements of cargo containers interchangeably between transport modes, i.e., motor, water, and air carriers, and where the equipment is compatible within the multiple systems.

**intermodal container**

A freight container designed and constructed to permit it to be used interchangeably in two or more modes of transport.

**intermodal passenger terminal**

An existing railroad passenger terminal which has been or may be modified as necessary to accommodate several modes of transportation, including intercity rail service and some or all of the following: intercity bus, commuter rail, intracity rail transit and bus transportation, airport limousine service and airline ticket offices, rent-a-car facilities, taxis, private parking, and other transportation services.

**intermodal portable tank**

A specific class of portable tanks designed primarily for international intermodal use.

**intermodal transport**

Enables cargo to be consolidated into economically large units (e.g., containers, bulk grain railcars) optimizing use of specialized intermodal handling equipment to effect high-speed cargo transfer between ships, barges, railcars, and truck chassis using a minimum of labor to increase logistic flexibility, reduce consignment delivery times, and minimize operating costs.

**intermodal transportation**

Use of more than one type of transportation; e.g., transporting a commodity by barge to an intermediate point and by truck to destination.

**intermodalism**

Typically used in three contexts: a) Most narrowly, it refers to containerization, piggyback service, or other technologies that provide the seamless movement of goods and people by more than one mode of transport. b) More broadly, intermodalism refers to the provision of connections between different modes, such

as adequate highways to ports or bus feeder services to rail transit. c) In its broadest interpretation, intermodalism refers to a holistic view of transportation in which individual modes work together or within their own niches to provide the user with the best choices of service, and in which the consequences on all modes of policies for a single mode are considered. This view has been called balanced, integrated, or comprehensive transportation in the past.

**internal**

(1) Within or beneath the surface of a body part or other structure. (2) See *medial*.

**internal audit**

Audit performed by personnel of the company being audited to assure that internal procedures, operations, and accounting practices are in proper order, in contrast to an audit by outside, independent agencies.

**internal biomechanical environment**

The mechanical forces to which bodily tissues, particularly the musculoskeletal system, are subjected when executing motions or being acted upon by outside forces.

**internal canthus**

See *endocanthus*.

**internal clock**

A hypothetical internal bodily mechanism responsible for maintaining biological rhythms. See also *circadian pacemaker*.

**internal combustion engine**

An engine in which the power is developed through the expansive force of fuel that is fired or discharged within a closed chamber or cylinder.

**internal consistency**

Having data within an experiment, analysis, or test which are repeatable across subjects or which have logical relationships within a subject.

**internal contamination**

As pertains to ionizing radiation, radioactive contamination within a person's body as a result of inhaling, swallowing, or skin puncture by radioactive materials.

**internal conversion**

A mechanism of radioactive decay in which transition energy is transferred to an orbital electron, causing its ejection from the atom.

**internal desynchronization**

The loss of normal phase relationships between biological rhythms within a single entity.

**internal ear**

See *inner ear*.

**internal injury**

Any injury to organs lying within the thoracic or abdominal cavities.

**internal naris**

The junction of the posterior nasal cavity with the nasopharynx.

**internal pacing**

Pertaining to self-paced work.

**internal radiation**

Nuclear radiation (alpha and beta particles and gamma radiation) resulting from radioactive substances inside the body. Important sources are iodine-131 in the thyroid gland, and strontium-90 and plutonium-239 in bone.

**internal reporting**

Reporting of a violation of a law or corporate policy to upper-level management within an organization. Part of a Self-Reporting or Violation-Reporting System under the Federal Sentencing Guidelines.

**internal traffic**

See *internal water transportation*.

**internal water transportation**

Includes all local (intraport) traffic and traffic between ports or landings wherein the entire movement takes place on inland waterways. Also termed internal are movements involving carriage on both inland waterways and the water of the Great Lakes, and inland movements that cross short stretches of open water that link inland systems.

**internal work**

That manual work done by an operator during the operation of a machine or process he/she is supervising. Also referred to as *fill up work* and *inside work*.

**internally paced work**

See *self-paced work*.

**international**

*Air Commerce*. Traffic (passengers and freight) performed between the designated airport and an airport in another country or territory.

**international air operator**

Commercial air transportation outside the territory of the United States, including operations between the U.S. and foreign countries and between the U.S. and its territories and possessions.

**International Air Transportation Association (IATA)**

Established in 1945, a trade association serving airlines, passengers, shippers, travel agents, and governments. The association promotes safety, standardization in forms (baggage checks, tickets, weight bills), and aids in establishing international airfares. IATA headquarters are in Geneva, Switzerland.

**international airport**

(1) Any airport designated by the Contracting State in whose territory it is situated as an airport of entry and departure for international air traffic. (2) An airport of entry which has been designated by the Secretary of Treasury or Commissioner of Customs as an international airport for customs service. (3) A landing rights airport at which specific permission to land must be obtained from customs authorities in advance of contemplated use. (4) Airport designated under the Convention on International Civil Aviation as an airport for use by international commercial air transport and/or international general aviation.

**international and territorial operations**

*Aviation*. The operation of aircraft flying between the 50 United States and foreign points, between the 50 United States and U.S. possessions and territories, and between two foreign points. Includes both the combination passenger/cargo and the all-cargo carriers engaged in international and territorial operations.

**international bunkers**

Storage compartments on vessels and aircraft engaged in international commerce, where fuel to be used by the vessel or aircraft is stored.

**International Cargo Handling Coordination Association (ICHCA)**

a) Collects, edits, and disseminates technical information relating to cargo handling by all modes of transport. b) Maintains consultative status with the International Standards Orga-

nization for the development of standards relating to cargo handling equipment (such as hooks, containers, wire slings, spreaders, and pallets). c) Maintains a library for members' use. d) Represents members' interests on an international basis.

### **International Civil Aviation Organization (ICAO)**

A specialized agency of the United Nations whose objective is to develop the principles and techniques of international air navigation and to foster planning and development of international civil air transport. ICAO Regions include (AFI) African Indian Ocean Region, (CAR) Caribbean Region, (EUR) European Region, (MID/ASIA) Middle East/Asia Region, (NAM) North American Region, (NAT) North Atlantic Region, (PAC) Pacific Region, (SAM) South American Region.

### **International Civil Aviation Organization Broadcast**

A transmission of information relating to air navigation that is not addressed to a specific station or stations.

### **International Committee on Radiation Protection (ICRP)**

An international group of scientists that develops recommendations on ionizing radiation dose limits and other radiation protection measures.

### **International Court of Justice**

The judicial arm of the United Nations. It has jurisdiction to give advisory opinions on matters of law and treaty construction when requested by the General Assembly, Security Council, or any other international agency authorized by the General Assembly to petition for such opinion. It also has jurisdiction to settle legal disputes between nations when voluntarily submitted to it. Its judgements may be enforced by the Security Council. Its jurisdiction and powers are defined by statute, to which all member states of the U.N. are parties. Judges of this Court are elected by the General Assembly and Security Council of the U.N.

### **international flight information manual**

A publication designed primarily as a pilot's preflight planning guide for flights into foreign airspace and for flights returning to the U.S. from foreign locations.

### **International Flight Service Station (IFSS)**

A central operations facility in the flight advisory system, manned and equipped to control aeronautical point-to-point telecommunications, and air/ground telecommunications with pilots operating over international territory or waters, providing flight plan filing, weather information, search and rescue action, and other flight assistance operations.

### **international freight forwarder**

A person, duly registered with the Federal Maritime Board, engaged in the business of dispatching shipments on behalf of other persons, for a consideration, by ocean going vessels in commerce from the United States, its territories, or possessions, and handling the formalities incident to such shipments.

### **international inland waterways transport**

Inland waterways transport between two places (a place of loading/embarkment and a place of unloading/disembarking) located in two different countries. It may involve transit through one or more additional countries.

### **international jurisdiction**

Power of a court or other organization to hear and determine matters between different countries or persons of different countries or foreign states.

### **international law**

Those laws governing the legal relations between nations.

### **International Maritime Organization (IMO)**

Established as a specialized agency of the United Nations in 1948. The International Maritime Organization facilitates cooperation on technical matters affecting merchant shipping and traffic, including improved maritime safety and prevention of marine pollution. Headquarters are in London, England.

### **International Maritime Satellite Organization (INMARSAT)**

An international partnership of signatories from 67 nations. The partnership provides mobile satellite capacity to its signatories, who, in turn, use the capacity to provide worldwide mobile satellite services to their maritime, aeronautical, and land-mobile customers including shipping, cruise, fishing, research and offshore exploration industries, and airlines. INMARSAT began service in 1976.



**international operations**

In general, operations outside the territory of the U.S., including operations between the U.S. and foreign countries, and the U.S. and its territories or possessions. Includes both the combination passenger/cargo carrier and the all-cargo carriers engaged in international and territorial operations.

**International Organization for Standardization (ISO)**

Founded as a worldwide federation to promote the development of international manufacturing, trade, and communication standards, thereby facilitating the international exchange of goods and services. ISO has promulgated more than 8,000 international standards.

**international passenger**

Any person traveling on any type of public conveyance (e.g., waterborne, airborne, etc.) between the United States and foreign countries and between Puerto Rico and the Virgin Islands and foreign countries.

**International System of Units (SI)**

See *basic units*.

**international transportation**

Transportation between any place in the United States and any place in a foreign country; between places in the United States through a foreign country; or between places in one or more foreign countries through the United States.

**Internet**

A network of computers.

**Internet Service Provider (ISP)**

Provides Internet access to people or corporations.

**interoceptor**

Any sensory receptor sensitive to changes within the viscera and blood vessels

**interocular breadth**

See *endocanthic breadth*.

**interocular distance**

See *interpupillary breadth*.

**interphalangeal**

Between the phalanges of the hand or foot.

**interpolate**

To estimate one or more unknown values

within a range of known values using some predictor.

**interpupillary**

Pertaining to the region between the eye pupils.

**interpupillary breadth**

The horizontal linear distance between the centers of the pupils of the eyes. Measured with the individual's scalp muscles relaxed, the eyes open, and looking straight ahead.

**interrogator**

*Aviation.* The ground-based surveillance radar beacon transmitter-receiver, which normally scans in synchronism with a primary radar, transmitting discrete radio signals which repetitiously request all transponders on the mote being used to reply. The replies received are mixed with the primary radar returns and displayed on the same plan position indicator (radar scope). Also, applied to the airborne element of the TACAN/DME system.

**interrogatories**

Part of the pre-trial discovery process. A formal set of questions, usually written, specific to the case, that must be answered by the party served, usually in writing and before the trial date.

**interrupter**

A mechanical barrier in a fuse that prevents transmission of an explosive effect to some elements beyond the interrupter.

**interrupter switch**

As pertains to systems over 600 volts (nominal), a switch capable of making, carrying, and interrupting specified currents.

**interscapulae**

Pertaining to the region of the back between the two scapular bones.

**interscye, bent torso**

The surface distance across the back between the scye points. Measured with the individual standing, the torso bent forward from the waist at an angle of about 90°, and the arms hanging relaxed.

**interscye, seated forward reach**

The surface distance across the back between the scye points. Measured with the individual sitting erect with his/her arms extended forward horizontally.

**interscye, seated leaning**

The surface distance across the back between the posterior axillary folds at the lower level of the armpits. Measured with the individual seated and leaning forward with his/her hands on his/her knees.

**interscye, standing erect**

The surface distance across the back between the posterior axillary folds at the lower level of the armpits. Measured with the individual standing erect and his/her body weight distributed equally between the two feet.

**intersecting runway**

Two or more runways which cross or meet within their lengths.

**intersection**

*Aviation.* (1) A point defined by any combination of courses, radials, or bearings of two or more navigational aids. (2) Used to describe the point where two runways, a runway and a taxiway, or two taxiways cross or meet.

**intersection departure**

*Aviation.* A departure from any runway intersection except the end of the runway.

**Inter-Society Color Council - National Bureau of Standards color system**

See *color ordering system*.

**interstate**

(1) Limited access divided facility of at least four lanes designated by the Federal Highway Administration as part of the Interstate System. (2) Meaning between states or involving more than one state.

**interstate air commerce**

The carriage by aircraft of persons or property for compensation or hire, or the carriage of mail by aircraft, or the operation or navigation of aircraft in the conduct or furtherance of a business or vocation, in commerce between a place in any State of the United States, or the District of Columbia, and a place in any other State of the United States, or the District of Columbia; or between places in the same State of the United States through the airspace over any place outside thereof; or between places in the same territory or possession of the United States, or the District of Columbia.

**Interstate Air Pollution Control Agency**

Under the Clean Air Act: An air pollution control agency established by two or more

states, or an air pollution control agency of two or more municipalities located in different states.

**interstate air transportation**

The carriage by aircraft of persons or property as a common carrier for compensation or hire, or the carriage of mail by aircraft in commerce: a) between a place in a State or the District of Columbia and another place in another state or the District of Columbia; b) between places in the same state through the airspace over any place outside that state; or c) between places in the same possession of the United States; whether that commerce moves wholly by aircraft or partly by aircraft and partly by other forms of transportation.

**interstate carrier water supply**

A source of water for drinking and sanitary use on planes, buses, trains, and ships operating in more than one state. These sources are federally regulated.

**interstate commerce**

Trade, traffic, or transportation in the United States which is between a place in a state and a place outside of such state (including a place outside of the United States) or is between two places in a state through another state or a place outside of the United States.

**Interstate Commerce Act**

The act of Congress of February 4, 1887 (49 U.S.C.A. § 10101 et seq.), designed to regulate commerce between the states, and particularly the transportation of persons and property, by carriers, between interstate points.

**Interstate Commerce Commission (ICC)**

The federal body charged with enforcing Acts of Congress affecting interstate commerce.

**Interstate Commerce Commission authorized carrier**

A for-hire motor carrier engaged in interstate or foreign commerce, subject to economic regulation by the ICC.

**Interstate Commerce Commission exempt carrier**

A for-hire motor carrier transporting commodities or conducting operations not subject to economic regulation by the ICC.

**interstate highway (freeway or expressway)**

A divided arterial highway for through traffic with full or partial control of access and grade separations at major intersections.

**interstate highway system**

This system is part of the Federal Aid Primary system. It is a system of freeways connecting and serving the principal cities of the continental United States.

**interstate pipeline**

(1) A pipeline or that part of a pipeline that is used in the transportation of hazardous liquids or carbon dioxide in interstate or foreign commerce. (2) A natural gas pipeline company that is engaged in the transportation, by pipeline, of natural gas across state boundaries, and is subject to the jurisdiction of the Federal Energy Regulatory Commission (FERC) under the Natural Gas Act. *See also intrastate pipeline.*

**interstate waters**

Waters that flow across or form part of state or international boundaries, e.g., the Great Lakes, the Mississippi River, or coastal waters.

**interstimulus-onset interval**

The length of time between the onset of one stimulus and the onset of a second stimulus.

**interstitial**

The space between cellular components or parts of a structure or organ.

**interstitial monitoring**

A technique for monitoring the integrity of the area between the primary and secondary containment systems of underground storage tanks (USTs).

**Intertropical Convergence Zone (ITCZ)**

The boundary zone separating the northeast trade winds of the Northern Hemisphere from the southeast trade winds of the Southern Hemisphere.

**interval scale**

*See equal-interval scale.*

**intervertebral disk**

A circular mass of fibrous cartilage located between adjacent vertebrae in the spine.

**interview**

A spontaneous or organized sequence of questions and discussion to exchange information relevant to a particular situation between two or more individuals.

**intervocalic**

Occurring between vowels.

**intestine**

The membranous tube extending from the pylorus of the stomach to the anus, consisting of the small intestine and the large intestine.

**intort**

To rotate a structure toward the midline, especially the eye.

**intorter**

A muscle which intorts.

**intoxication**

(1) A state of having been poisoned by any toxic substance, whether unknowingly or due to one's own voluntary actions. Intoxication in the sense of poisoning can be caused by carbon monoxide, lead, or other toxic agents. Some medications can be poisonous in excessive doses. Intoxication can also occur in persons who have an allergy to medications such as penicillin, to various serums, and to other substances. Any type of drug addiction is medically recognized as a state of intoxication. In addition to those mentioned, there are the commonly recognized types of poisoning such as those caused by chemicals and food contaminants. Acid intoxication and alkaline intoxication are acidosis and alkalosis, respectively, of a severe grade. Intoxication in the sense of drunkenness occurs when the concentration of alcohol in the blood reaches about one-tenth of 1 percent. (2) A state of intense mental or emotional excitement.

**intra-abdominal pressure (IAP)**

That pressure exerted on the internal walls by gravity, the abdominal viscera, arterial supply, and the musculature.

**intra-cellular water**

That water contained within the cells of the body. One of two components of total body water.

**intrafacility**

*Aviation.* Within a single facility; for example, between two sectors within the same Area Control Facility (ACF), as contrasted with interfacility.

**intrafusil fiber**

The small muscles fibers within a muscle spindle that are involved in sensing length changes. *See also extrafusil fiber.*

**intra-individual variation**

That variation which occurs within a single person over time on the same or similar testing or observation.

**intransit deliveries**

Redeliveries to a foreign country of foreign gas received for transportation across U.S. territory, and deliveries of U.S. gas to a foreign country for transportation across its territory and redelivery to the United States.

**intransit passengers**

*Aviation.* Revenue passengers onboard international flights that transit an airport for non-traffic purposes in the 50 states.

**intransit receipts**

Receipts of foreign gas for transportation across United States (U.S.) territory and redelivery to a foreign country, and redeliveries to the U.S. of U.S. gas transported across foreign territory.

**intra-ocular muscle**

An involuntary, intrinsic, smooth muscle within the eye, specifically the ciliary and pupillary muscles.

**intra-ocular pressure**

That fluid pressure within the eyeball.

**intrapertitoneal**

Within the abdominal/pelvic cavity.

**intrapleural**

Within the chest cavity.

**intrasensory matching**

A procedure in which a subject matches the magnitude of a stimulus in a sensory modality with the magnitude of another stimulus using the same modality.

**intrastate**

Travel or movement or events occurring within the same state.

**intrastate air transportation**

The carriage of persons or property as a common carrier for compensation or hire, by turbojet powered aircraft capable of carrying thirty or more persons, wholly within the same state of the United States.

**intrastate commerce**

Any trade, traffic, or transportation in any state which is not described in the term "interstate commerce."

**intrastate pipeline**

(1) A pipeline or that part of a pipeline to which 49 CFR 195.2 applies that is not an interstate pipeline. (2) A natural gas pipeline company engaged in the transportation, by pipeline, of natural gas not subject to the jurisdiction of the Federal Energy Regulatory Commission (FERC) under the Natural Gas Act. *See also interstate pipeline.*

**intraterritorial traffic**

Traffic between ports in Puerto Rico and the Virgin Islands, which are considered as a single unit.

**intratracheal**

Endotracheal or within or throughout the trachea.

**intravehicular activity (IVA)**

Any activity occurring within a vehicle, especially referring to a space vehicle.

**intravenous**

Within a vein.

**intravenous infusion**

Administration of fluids through a vein. Also referred to as venoclysis and intravenous feeding. This method of feeding is used most often when a patient is suffering from severe dehydration and is unable to drink fluids because he/she is unconscious, recovering from an operation, unable to swallow normally, or vomiting persistently.

**intrinsic**

Pertaining to a structure or mechanism which originates within a structure and acts on itself.

**intrinsic muscle**

Any muscle having both its origin and insertion located within a given structure and which is involved in the function of that structure.

**intrinsically safe**

Incapable or producing sufficient energy to ignite an explosive atmosphere and two-fault tolerant against failure with single fault tolerance at 1.5 times the maximum voltage or energy.

**intubation**

Insertion of a tube. The purpose varies with the location and type of tube inserted; generally the procedure is done to allow for drainage, to maintain an open airway or for the

administration of anesthetics or oxygen. Intubation in the stomach or intestine is done to remove gastric or intestinal contents for the relief or prevention of distention, or to obtain a specimen for analysis. A tube may be inserted in the common bile duct to allow for drainage of bile from the ducts that drain the liver after surgery on the gallbladder or the common bile duct. Tracheal intubation can be achieved by the insertion of an endotracheal tube into the trachea via the nose or mouth.

**inundation area**

An area of land subject to flooding.

**invasive**

Pertaining to a procedure which requires breaking the skin, insertion of any object into any body cavity except the mouth, or which causes extreme discomfort.

**inventory**

(1) *General*. Materials on hand, or, a physical count of the materials on hand. (2) *TSCA*. An inventory of chemicals produced pursuant to Section 8(b) of the Toxic Substances Control Act.

**inventory management**

Those techniques involved in maintaining the desired inventory levels, including planning, tracking, distribution, providing storage, and purchasing.

**inverse power function**

An exponential mathematical relationship involving a negative exponent or where the variable would be represented in the denominator with a positive exponent.

**inverse square law**

Doubling the distance from a source of light, noise, ionizing radiation, etc. reduces the intensity of the exposure to the source at that point by one-fourth (i.e., the intensity varies inversely with the square of the distance from the source).

**inversion**

An atmospheric condition caused by a layer of warm air preventing the rise of cooling air trapped beneath it. This condition prevents the rise of pollutants that might otherwise be dispersed and can result in an air pollution episode.

**invert**

To turn inward.

**invertebrate**

(1) Having no vertebral column. (2) An animal organism that has no vertebral column.

**inverted image**

An image which has been rotated within its plane by 180°.

**inverted U function**

See *concave function*.

**inverter**

Any muscle which turns the sole of the foot inward.

**investigation parameters**

As defined by management, the specific considerations which must be evaluated to determine the focus of the accident investigation process. Examples include such aspects as the types of occurrences that will require reporting and investigating, the elements of a business operation or function to be investigated and to what extent, how accidents and incidents shall be formally reported, and what use shall be made of the information reported.

**investigatory interrogation**

An investigatory interrogation outside the scope of the *Miranda Rule* is the questioning of persons by law enforcement officers in a routine manner in an investigation which has not reached an accusatory stage and where such persons are not in legal custody or deprived of their freedom of action in any significant way.

**investments and special funds**

Investments and advances to investor-controlled and other associated companies, notes and receivables not due within one year, investment in securities issued by others, allowance for unrealized gain or loss on non-current marketable equity securities, funds not available for current operations, investments in leveraged leases, and net investments in direct financing and sales-type leases which are not reasonably expected to be amortized within one year.

**involuntary muscle**

Those muscles not normally under conscious control, such as the smooth muscles.

**involution**

The process of decline or decay in human processes later in life.

**iodine**

A chemical element, atomic number 53, atomic weight 126.904, symbol I. Salts of iodine and tincture of iodine were once used as antiseptics. Iodine is a strong poison, however, and has largely been replaced by other antiseptics that are less irritating to the tissues and equally effective. Since iodine salts are opaque to x-rays, they can be combined with other compounds and used as contrast media in diagnostic x-ray examinations of the gallbladder and kidneys.

**IOHA**

International Occupational Health Association.

**ion**

An atom or chemical radical (group of chemically combine atoms) bearing a positive or negative electrical charge caused by a deficiency or excess of electrons.

**ion exchange**

The reversible interchange of ions of like charge between an insoluble solid and a surrounding liquid phase in which there is no permanent change in the structure of the solid.

**ion exchange resin**

Synthetic resins which contain active groups enabling the resin to combine with, or exchange ions between it and those in another substance.

**ion exchange treatment**

A common water softening method often found on a large scale at water purification plants that removes some organics and radium by adding calcium oxide or calcium hydroxide to increase the pH to a level where the metals will precipitate out.

**ion pair**

Two particles of opposite charge. One method by which ionizing radiation gives up its energy is by the production of ion pairs. *See also ionization.*

**ionization**

The separation of a normally electrically neutral atom or molecule into electrically charged components. The term may also be used to describe the degree or extent to which this separation occurs. Ionization is the removal of a negatively charged electron from the atom or molecule (either directly or indi-

rectly) leaving a positively charged ion. The separated electron and ion are then referred to as an *ion pair*. *See also ionizing radiation.*

**ionization chamber**

A device consisting of two electrically opposed, charged plates used to measure radioactivity.

**ionization density**

Number of ion pairs per unit volume.

**ionization track**

The detectable path of an ionizing photon or particle following passage through tissue or another substance.

**ionizing radiation**

Electromagnetic radiation (x-ray or gamma ray photons or quanta) or corpuscular radiation (alpha or beta particles, electrons, positrons protons, neutrons, or heavy particles) capable of producing ions by direct or secondary processes as it passes through matter.

**ionometer**

An instrument for measuring the intensity or quantity of x-rays.

**ionosphere**

An electrified region of the upper atmosphere where fairly large concentrations of ions and free electrons exist.

**iontophoresis**

The process of transferring ions across some barrier with direct current.

**IPM**

*See integrated pest management. See also Inspirable Particulate Mass.*

**IPM-TLVs**

*See Inspirable Particulate Mass TLVs.*

**IQ**

*See intelligence quotient.*

**IR**

Infrared.

**iridescent**

Pertaining to the optical interference effects in thin films or of reflected diffracted light from ribbed surfaces.

**iridescent clouds**

Clouds that exhibit brilliant spots or borders of colors, most often red and green. Observed up to about 30° from the sun.



**IRIS**

See *Integrated Risk Information System*.

**iris**

(1) The colored circular structure in the aqueous humor of the eye which encircles the pupil between the cornea and the lens and regulates the amount of light reaching the retina. (2) An arrangement of flat leaf-like structures which provides an approximately circular opening on retraction.

**iris reflex**

The adjustment of muscle fiber length in the iris to accommodate light levels to which the eye is exposed.

**iritis**

Inflammation of the iris. The condition may be acute, occurring suddenly with pronounced symptoms, or chronic, with less severe but longer-lasting symptoms. The cause is often obscure. Frequently, the condition is associated with rheumatic diseases, particularly rheumatoid arthritis, and with diabetes mellitus, syphilis, diseased teeth, tonsillitis, and other infections. It may also be caused by injury. Iritis is characterized by severe pain, usually radiating to the forehead and becoming worse at night. The eye is usually red and the pupil contracts and may be irregular in shape. There is extreme sensitivity to light, together with blurring of vision and tenderness of the eyeball. The iris becomes swollen and discolored. If not treated promptly, iritis can be dangerous because of scarring and adhesions that may cause impaired vision and possibly blindness.

**iron**

(1) *General*. A chemical element, atomic number 26, atomic weight 55.847, symbol Fe. (2) *Human Physiology*. Iron is chiefly important to the human body because it is the main constituent of hemoglobin, and a constant although small intake of iron in food is needed to replace erythrocytes that are destroyed in the body's processes. Most iron reaches the body in food, where it occurs naturally in the form of iron compounds. These are converted for use in the body by the action of the hydrochloric acid produced in the stomach. This acid separates the iron from the food and combines with it in a form that is readily assimilated by the body. Vitamin C enhances the absorption of food iron.

The administration of alkalis hampers iron absorption. The amount of new iron needed every day by the adult is approximately 15 mg. (3) *Transit (slang)*. An old model truck.

**iron bacteria**

Bacteria capable of metabolizing reduced iron. Also called *crenothrix*.

**iron lung**

*Transit (slang)*. The conventional 220 or 250 horsepower engine.

**IRPA**

International Radiation Protection Association.

**irradiance**

The density of radiant flux per unit area on a specified surface.

**irradiate**

To expose to some form of directed energy.

**irradiated food**

Food that has been subject to brief radioactivity, usually by gamma rays, to kill insects, bacteria, and mold, and preserve it without refrigeration or freezing.

**irradiation**

Exposure to radiation of wavelengths shorter than those of visible light (gamma, x-ray, or ultraviolet) for medical purposes, the destruction of bacteria in milk or other foodstuffs, or for inducing polymerization of monomers or vulcanization of rubber.

**irregular element**

A work element occurring at other than regular intervals, but which may be statistically predicted.

**irregular shift**

A variable work schedule, set by the employer for his/her convenience, usually to accommodate anticipated workloads.

**irreparable damages**

In the law pertaining to injunctions, damages for which no certain pecuniary standard exists for measurement. Damages not easily ascertainable at law. With reference to public nuisances which a private party may enjoy, the term includes wrongs of a repeated and continuing character, or which occasion damages estimatable only by conjecture, and not by any accurate standard.

**irrespirable**

Unfit for breathing.

**irreversible effect**

An effect that is not reversible once the exposure has terminated.

**irreversible injury**

An injury that is neither repairable nor can be expected to heal.

**irrigation**

(1) Washing a body cavity or wound by a stream of water or other fluid. (2) Technique for applying water or wastewater to land areas to supply the water and nutrient needs of plants.

**irrigation machine**

An electrically driven or controlled machine, with one or more motors, not hand portable, and used primarily to transport and distribute water for agricultural purposes.

**irritability**

(1) Ability of an organism or a specific tissue to react to the environment. (2) The state of being abnormally responsive to slight stimuli or unduly sensitive.

**irritant**

Substance that induces local inflammation of normal tissues on immediate, prolonged, or repeated contact.

**irritant smoke**

A smoke-like material that is used in determining whether a mechanical air-purifying respirator wearer achieves a good fit in a qualitative fit test. Stannic oxychloride or titanium tetrachloride are used as the source of irritant smoke. This smoke is also used in ventilation system evaluations (i.e., smoke tubes).

**irritation**

A reaction of tissues to an injury that results in an inflammation; the response or reaction by tissues to the application of a stimulus.

**IRV**

See *inspiratory reserve volume*.

**ISA**

See *Instrument Society of America*.

**isallobar**

A line of equal change in atmospheric pressure during a specified time interval.

**ischemia**

A condition in which there is an insufficient amount of blood to a part of the body, due to a functional constriction or blockage of a blood vessel, that can result in damage to the affected area.

**ischemic hypoxia**

A form of hypokinetic hypoxia in which arterial blood flow is reduced.

**ischial tuberosity**

A projection at the base of the ischium which can become a pressure point when sitting on a hard surface.

**ischium**

The inferior and posterior portion of each coxal bone.

**Ishihara test**

A commonly used color deficiency test using plates on which numbers of a given color are embedded in a variety of hues. One number is seen by those with normal vision, another number by those with a color vision deficiency or color blindness.

**ISO**

See *International Organization for Standardization*.

**ISO 14000**

Established in 1996 by the International Organization for Standardization, a worldwide federation funded to promote international standards in many areas. It is a set of voluntary standards in the area of environmental management, auditing, performance evaluation, and life cycle analysis. The standards consist of guidelines or principles, systems, and supporting techniques with two primary components: establishment of an environmental management system, and development of the practice of environmental auditing. Certification often qualifies companies for a decrease in insurance premium levels and an acknowledgment worldwide of their commitment to maintaining and improving the environment.

**ISO 14010**

International Standard under ISO 14000 which includes general principles of environmental auditing.

**ISO 14011/1**

International Standard under ISO 14000 which includes auditing of environmental management systems.

**ISO 14012**

International Standard under ISO 14000 which includes qualification criteria for environmental auditors.

**ISO 14040**

International Standard under ISO 14000 to address the life cycle assessment of products.

**isacceleration**

Having a constant acceleration.

**isobar**

(1) One of several nuclides having the same number of nucleons, but different combinations of protons and neutrons (i.e., the same mass number, but different atomic numbers).  
(2) A line connecting points of equal pressure. A series of points on a map or chart that when connected depicts a line of constant atmospheric pressure.

**isobaric chart**

See *constant pressure chart*.

**isobaric surface**

A surface along which the atmospheric pressure is equal everywhere. See also *constant pressure chart*.

**isocandela diagram**

A set of plotted isocandela lines on a coordinate system to show lighting intensity spatial relationships.

**isocandela line**

A contour line representing an area of equal lighting intensity.

**isocyanate asthma**

Bronchial asthma as a result of an allergy to toluene diisocyanate and similar cyanate compounds.

**isoforce**

See *isotonic*.

**isoinertial**

Pertaining to the force applied to a constant, moving mass.

**isoinertial action**

That dynamic muscle action involved in moving a constant mass. Also referred to as *isoinertial concentration*.

**isoinertial concentration**

See *isoinertial action*.

**isokinetic**

Pertaining to movement at a constant velocity.

**isokinetic action**

A dynamic muscle action in which muscle contraction occurs at a constant velocity and maximal tension is maintained during the entire movement sequence. Also referred to as *isokinetic contraction*.

**isokinetic contraction**

See *isokinetic action*.

**isokinetic sampling**

An air sampling technique used to measure particulates and other contaminants in exhaust stacks.

**isolated**

Not readily accessible to persons unless special means for access are used.

**isolated power system**

A system comprising an isolating transformer or its equivalent, a line isolation monitor, and its ungrounded circuit conductors.

**isolated word recognition**

See *word recognition*.

**isolating switch**

See *disconnecting switch and switch (3)*.

**isolation**

(1) *General*. Any spatial or physical separation from other humans or certain individuals.  
(2) *Power Systems*. The process by which a permit space is removed from service and completely protected against the release of energy and material into the space by such means as blanking or binding; misaligning or removing sections of lines, pipes, or ducts; a double block and bleed system; lockout or tagout of all sources of energy; or blocking or disconnecting all mechanical linkages.  
(3) *Acoustics*. The use of materials or construction around a noise source to limit the transmission of sound from that source.

**isomer**

Chemical substances with the same number of characteristic atoms which are electronically arranged differently producing compounds with distinguishable physical and chemical properties.

**isomerization**

The process whereby any isomer is converted into another, usually requiring special conditions of temperature, pressure, or catalysts.

**isometric**

Having or maintaining the same dimension. May refer to either a muscle length or an engineering display/drawing.

**isometric action**

A muscular process in which tension increases in one or more muscles, but the muscles retain approximately the same length and essentially no movement of the body link(s) occurs for prolonged periods of time. Also referred to as *isometric contraction*.

**isometric joystick**

A non-moving joystick which provides a directional output proportional to the force applied by the user. Also referred to as *force joystick* and *pressure joystick*.

**isometric strength test**

A test to determine the safe static load handling capabilities for workers.

**isometric view**

A three-dimensional appearing view of an object on a display or drawing that has been constructed so that perspective has been ignored.

**isopleth**

See *sound level contour*.

**isoseismal lines**

*Seismology*. A line connecting points of identified intensity for a given earthquake. Also referred to as *isoseisms*.

**isoseismal map**

*Seismology*. A map showing the distribution of intensity across a region for a particular earthquake using *isoseismal lines* to connect points of equal intensity.

**isoseisms**

See *isoseismal lines*.

**isotach**

A line connecting points of equal wind speed.

**isotherm**

A line connecting points of equal temperature.

**isotonic**

Having uniform tension or force. Also known as *isoforce*.

**isotonic action**

A dynamic muscle action in which the muscle length of one or more muscles shortens and movement of one or more body links occurs, with constant muscle tension throughout the movement.

**isotonic contraction**

See *isotonic action*.

**isotonic hypoxemia**

A hypoxemic condition with a normal partial pressure of oxygen, generally due to decreased hemoglobin or toxin/drug effects.

**isotonic joystick**

A joystick whose output is proportional to and in the same direction as the displacement of the joystick from its null point. Sometimes referred to as *displacement joystick*.

**isotope**

Forms of the same element having nearly identical chemical properties but differing in their atomic masses (due to different numbers of neutrons in their respective nuclei) and in nuclear properties such as radioactivity or fission.

**isotropic**

Having an equal spatial distribution or growth in all directions.

**ISP**

See *Internet Service Provider*.

**Itai Itai disease**

Name given to a disease that was considered to be a result of eating rice that had been contaminated with cadmium from industrial emissions.

**itch**

(1) Any skin disease attended by itching. (2) Scabies.

**ITCZ**

See *Intertropical Convergence Zone*.

**iterate**

To calculate desired result using repeated operations.

**itinerant aircraft operations**

All aircraft operations other than local operations.

**IVA**

See *intravehicular activity*.

**IWT**

See *inland waterway transport*.

# J

## **J route**

See *jet route*.

## **jack staff**

A vertical pole erected on the lead barge of a tow used by the pilot for aligning the heading of the tow.

## **jacket**

(1) A short, lightweight coat. (2) A thermal blanket or insulating material placed around certain pipes or piping systems to ensure protection from ambient temperatures that may fall below the freezing point.

## **jackhammer**

A hand-controlled chisel device operated by compressed air.



Workers using a jackhammer to break rock at a demolition site

## **jacking it around**

*Transit (slang)*. Backing a semitrailer around a very sharp curve.

## **jackknife**

*Transit (trucking)*. A jackknife can occur at any time during a crash sequence. Jackknifing is usually restricted to truck tractors pulling a trailing unit in which the trailing unit

and the pulling vehicle rotate with respect to each other. See also *accident and rollover*.

## **jacksonian epilepsy**

A progression of involuntary clonic movement or sensation, with retention of consciousness.

## **jacobs ladder**

A rope ladder suspended from the side of a vessel and used for boarding.

## **jamming**

*Aviation*. Electronic or mechanical interference which may disrupt the display of aircraft on radar or the transmission/reception of radio communications/navigation.

## **jaundice**

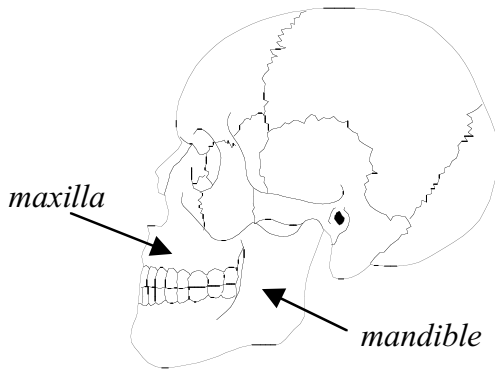
An abnormal physical condition caused by bile pigments in the blood and characterized by yellowing of the skin and sclera of the eye and by lassitude and loss of appetite. It is usually first noticeable in the eyes, although it may come on so gradually that it is not immediately noticed by those in daily contact with the jaundiced person. Jaundice is not a disease. It is a symptom of one of a number of different diseases and disorders of the liver, gallbladder, and blood. One such disorder is the presence of a gallstone in the common bile duct, which carries bile from the liver to the intestine. This may obstruct the flow of bile, causing it to accumulate and enter the bloodstream. The obstruction of bile flow may cause bile to enter the urine, making it dark in color, and also decrease the bile in the stool, making it light and clay-colored. This condition requires surgery to remove the gallstone before it causes serious liver injury. Jaundice may also be a symptom of infectious hepatitis. This very infectious disease may result in damage to the liver if not treated. Certain diseases of the blood, such as hemolytic anemia, increase the amount of yellow pigment in the bile, causing jaundice. The pigment that causes jaundice is called bilirubin. It is derived from hemoglobin that is released when erythrocytes are hemolyzed and therefore is constantly being formed and introduced into the blood as worn-out or defective erythrocytes are destroyed by the body. Normally the liver cells absorb the bilirubin and secrete it along with other bile constituents. If the liver is diseased, or if the flow of bile is obstructed, or if destruction of erythrocytes is



excessive, the bilirubin accumulates in the blood and eventually will produce jaundice. A diagnostic test for determination of the level of bilirubin in the blood (called the van den Bergh test) is of value in detecting elevated bilirubin levels at the earliest stages before jaundice appears, when liver disease or hemolytic anemia is suspected.

**jaw**

The two bones forming the skeletal framework for the mouth, the maxilla for the upper jaw bone, the mandible for the lower.



*The human skull showing the bones of the jaw*

**jerk**

(1) The rate of change of acceleration with time. (2) A sudden, spasmodic or reflex body movement.

**jet blast**

Jet engine exhaust (thrust stream turbulence).

**jet down**

To sink an object, generally a buoy sinker, deep into the mud below the river bottom by the use of high pressure water jet.

**jet fuel**

The term includes kerosene-type jet fuel and naphtha-type jet fuel. Kerosene-type jet fuel is a kerosene quality product used primarily for commercial turbojet and turboprop aircraft engines. Naphtha-type jet fuel is a fuel in the heavy naphtha boiling range used primarily for military turbojet and turboprop aircraft engines.

**jet lag**

A slang term describing the state of general discomfort from crossing one or more time zones rapidly, due to circadian rhythm desynchronization. Also referred to as *desynchronosis*.

**jet route**

A route designed to serve aircraft operations from 18,000 feet mean sea level (MSL) up to and including flight level 450. The routes are referred to as "J" routes with numbering to identify the designated route, e.g., J105.

**jet stream**

(1) Relatively strong winds concentrated within a narrow band in the atmosphere. (2) A migrating stream of high-speed winds present at high altitudes.

**jettisoning of external stores**

Airborne release of external stores, e.g., tip tanks, ordnance. *See also fuel dumping.*

**JHA**

*See Job Hazard Analysis.*

**jig**

Any precision mechanical device used to support or hold parts in position or act as a guide.

**jitney**

(1) Privately owned, small or medium-sized vehicle usually operated on a fixed route but not on a fixed schedule. (2) Passenger cars or vans operating on fixed routes (sometimes with minor deviations) as demand warrants without fixed schedules or fixed stops.

**jitter**

A periodic jumping of a target or small structure on a display.

**JND**

*See just noticeable difference.*

**job**

(1) The sum of all the tasks and duties assigned to and carried out by one or more workers toward the completion of some goal. (2) That work specified in a contract work order, usually to be performed by several people.

**job aid**

*See work aid.*

**job analysis**

An evaluation of job requirements through an evaluation of the duties and tasks, facilities and working conditions, and worker qualifications and responsibilities necessary to perform a job.

**job breakdown**

A division of a job into its elements; a listing of the elements comprising a job.

**job class**

A job classification level in which jobs involve similar types of work, difficulty, and/or pay.

**job classification**

The arrangement of jobs by job class.

**job content**

The total makeup of a job, including the physical tasks and the psychological factors of challenge, variety, and feeling of worth.

**job costing**

A cost determination in which manufacturing costs are attributed to individual items.

**job demand**

The combined physiological, sensory-perceptual, and psychological requirements for or loads experienced by a worker performing a particular job.

**job description**

A written general statement of the scope, duties, and responsibilities of a particular job.

**job design**

The process of determining what the job content should be for a set of tasks, how the tasks should be organized, and what linkage should exist between jobs. *See also work design.*

**job dimension**

Any of the primary quantifiable aspects of a job for evaluation purposes.

**job element**

Some distinct portion of a specified job.

**job enlargement**

An increase in job scope with the intent to make jobs more interesting, through the addition of more tasks of a similar nature to the duties or tasks currently being performed

**job enrichment**

An increase in the scope of a worker's job, with the intent of increasing variety and significance by adding additional duties such as planning, greater control over operations, and more interaction with others.

**job evaluation**

The process of determining the relative worth or utility of a job.

**job factor**

An essential element of a job which gives management some basis for setting a wage

range for the job, as well as the selection and training of workers.

**job hazard analysis (JHA)**

*See job safety analysis.*

**job modification**

A minor change to a job. *See also job redesign.*

**job plan**

An organized approach or document by management showing detailed procedures for each job.

**job redesign**

A significant, intentional change in job design.

**job restriction**

A condition in which an individual returning to the workforce following an illness or occupational injury is not permitted to perform certain tasks which might aggravate that illness or injury.

**job rotation**

The assignment to or performance of different activities by a group of workers on a periodic basis.

**job safety analysis (JSA)**

A generalized examination of the tasks associated with the performance of a given job and an evaluation of the individual hazards associated with each step required to properly complete the job. The JSA also considers the adequacy of the controls used to prevent or reduce exposure to those hazards. Usually performed by the responsible supervisor for that job and used primarily to train new employees, the JSA is also an excellent source of *paper evidence* during an accident investigation. Also known as *job hazard analysis*.

**job satisfaction**

The degree to which the work environment provides such qualities as variety, comfort, compensation, and social expression to make a job meaningful in meeting an individual's goals.

**Job Severity Index (JSI)**

A guideline for matching job design and employee placement such that an acceptable risk of injury potential is present.

**job sharing**

A work schedule in which two part-time workers perform the duties which would normally be assigned to one full-time person.

**job shop**

A company whose primary function is to produce small quantities of specialized parts or components for customers who will integrate them into larger products.

**job skill**

The combination of physical and mental abilities, experience, and training which enable a worker to perform a given task.

**job standardization**

Having or implementing a standard practice or method for some job.

**jockey line**

*Maritime.* Lashing used to prevent lateral movement between barges connected in tandem.

**jockeying**

That customer or user behavior in which he/she has the option of using several queues or lines, possibly even changing lines while waiting.

**jog**

An intermediate gait between walking and running, or an alternating combination of walking and running which is used as a form of exercise.

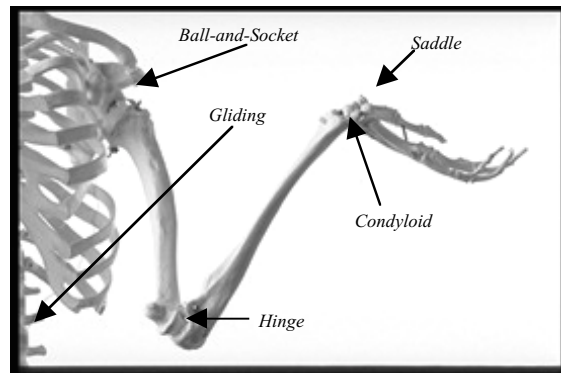
**johnboat**

A flat-bottomed skiff type boat with a square bow and stern.

**joint**

(1) Articulation between two bones that may permit motion and flexibility in one or more planes. They may become sites of concern with certain cumulative trauma disorders. Some joints are actually immovable, such as certain fixed joints where segments of bone are fused together in the skull. Other joints, such as those between the vertebrae, have extremely limited motion. However, most joints allow considerable motion. Many joints have an extremely complex internal structure. They are not only composed of the ends of bones but also of ligaments (tough whitish fibers binding the bones together); cartilage (connective tissue covering and cushioning the bone ends); the articulating capsule (a fi-

brous tissue that encloses the ends of the bones); the synovial membrane (lines the capsule and secretes lubricating fluid, or synovia); and some times bursae (fluid-filled sacs that cushion the movements of muscles and tendons). Joints are classified by variations in structure that make different kinds of movement possible. The movable joints are usually subdivided into hinge (e.g., elbow joint), pivot (e.g., cervical vertebrae joint); gliding (e.g., intervertebral joints), ball-and-socket (e.g., shoulder joint), condyloid (e.g., wrist joint), and saddle (e.g., base of the thumb). (2) Pertaining to a coordinated action between two or more groups. (3) Slang term for a cigarette filled with marijuana instead of tobacco.



*Types of anatomical joints*

**joint action**

An action brought by two or more as plaintiffs or against two or more as defendants.

**joint and several contracts**

Contracts in which the parties bind themselves both individually and as a unit (jointly).

**joint and several liability**

A legal doctrine holding the parties involved equally responsible, each of which is 100% liable. Imposed in cases where the harm caused is indivisible (i.e., where individual or joint parties are potentially responsible for the harm but it cannot be determined with any degree of certainty which parties or defendants are responsible for which aspect of the damage). Parties can be held responsible independently or mutually.

**joint capsule**

The connective tissue and membrane surrounding a synovial joint cavity.

**joint operations**

*Rail Operations.* Operations conducted on a track used jointly or in common by two or more railroads subject to 49 CFR 225 or operation of a train, locomotive, car, or other on-track equipment by one railroad over the track of another railroad.

**joint range of motion**

The angle through which a single joint can be flexed, extended, rotated, or otherwise normally moved without discomfort, pain, or injury.

**joint stability**

A measure of the rigidity of a joint.

**joint-use airport**

A military installation at which the Department of Defense permits some degree of civil aviation use. Degrees of civil aviation use include a) open to all civil aviation under a joint-use agreement; b) joint-use agreement for limited use. Strictly military airports do not qualify for primary or commercial service status.

**joint venture**

A legal entity in the nature of a partnership engaged in the joint undertaking of a particular transaction for mutual profit.

**Jones Act**

Federal statute passed in 1920 which provides that a seaman injured in the course of his employment by the negligence of the owner, master, or fellow crew members can recover damages for his injuries. Similar remedies are available under the Act to personal representatives of a seaman killed in the course of his employment.

**joule**

The amount of energy provided by one watt flowing for one second.

**journaling**

The recording and storage within a computer of the keystrokes input by a user.

**joystick**

A lever control or computer input device having at least 2 degrees of freedom and with which an operator may control an electromechanical system or a cursor or other activity on a display.

**JSA**

See *Job Safety Analysis*.

**JSI**

See *Job Severity Index*.

**judge**

An officer so named in his/her commission, who presides in some court. A public officer, appointed to preside and to administer the law in a court of justice.

**judicial branch of government**

That branch of government which consists of the nation's court system, from the Supreme Court down.

**judicial district**

One of the circuits or precincts into which a state is commonly divided for judicial purposes.

**judicial review**

A type of civil litigation challenging a government decision, usually the propriety of some regulatory decision such as promulgation, interpretation, or application of regulations.

**jugular**

Pertaining to the neck.

**jugular vein**

Large veins that return blood to the heart from the head and neck. Each side of the neck has two sets of jugular veins, external and internal. The external jugular carries blood from the face, neck, and scalp and has two branches, posterior and anterior. The internal jugular vein receives blood from the brain, the deeper tissues of the neck, and the interior of the skull. The external jugular vein empties into the subclavian vein, and the internal jugular vein joins it to form the brachiocephalic vein, which carries the blood to the superior vena cava, where it connects to the heart.

**Julian date**

A number representing the current day within a given year. The range is from 1 through 365 (366 in a leap year).

**jumbo barge**

A barge 35 feet wide by 195 or 200 feet long that may be either a hopper or cover-type barge.

**jumped the pin**

*Transit (slang).* Missing the fifth wheel pin on the trailer when coupling tractor to trailer.

**jumper's knee**

Pain at proximal end of the patellar tendon.

**junction**

Area formed by the connection of two roadways, including intersections, interchange areas, and entrance/exit ramps.

**jurisdiction**

Generally, the authority of the court to hear and decide a case; or, the authority of a governing or responsible body or agency to create, decide, interpret, and implement policies as in "the authority having jurisdiction."

**jury**

A certain number of men and women selected according to law, and sworn to inquire of certain matters of fact, and declare the truth upon evidence to be laid before them.

**jury instructions**

A direction given by the judge to the jury concerning the law of the case. A statement made by the judge to the jury informing them of the law applicable to the case in general or some aspect of it.

**just cause**

(1) A cause outside the legal cause, which must be based on reasonable grounds, and there must be a fair and honest cause or reason, regulated by good faith. As used in the statutory sense, it is that which, to an ordinary intelligent person, is justifiable reason for doing or not doing a particular act. (2) Having good and fair reason(s) for taking disciplinary action.

**just compensation**

Compensation which is fair to both the owner and the public when property is taken for public use through condemnation (eminent domain). Consideration is taken for such criteria as the cost of reproducing the property, its market value, and the resulting damage to the remaining property of the owner. The Fifth Amendment to the U.S. Constitution provides that no private property shall be taken for public use without "just compensation."

**just in time**

*Warehousing Industry.* In this method of inventory control, warehousing is minimal or nonexistent; the container is the movable warehouse and must arrive "just in time," that is not too early or too late.

**just noticeable difference (JND)**

The smallest amount of change from a reference stimulus which an observer will report as a difference on a given trial.

**just tolerable limit**

The maximal level of short-term exposure to an agent which will prevent the average individual from developing either acute or chronic symptoms caused by that agent.

**Justice Department**

One of the executive departments of the federal government, headed by the Attorney General. The chief purposes of the Department of Justice are to enforce the federal laws, to furnish legal counsel in federal cases, and to construe the laws under which other departments act. It conducts all suits in the Supreme Court in which the United States is concerned, supervises the federal penal institutions, and investigates and detects violations against federal laws. It represents the government in legal matters generally rendering legal advice and opinions, upon request, to the President and to the heads of the executive departments. The Attorney General supervises and directs the activities of the U.S. attorneys and marshals in the various judicial districts.

**justifiable cause**

Justifiable cause for prosecution is the well-founded belief of a person of ordinary caution, prudence, and judgement in the existence of facts essential to prosecution.

**justifiable homicide**

The killing of another person in self-defense when the danger of death or serious bodily injury exists. Such a homicide generally connotes only the use of force which is necessary to resist the other party's misconduct, and use of excessive force destroys the jurisdiction.

**justify**

(1) To defend or vindicate. (2) To arrange text, graphics, or other material to be formatted such that it is aligned along the left and/or right margins of the page.

**juxta nipple skinfold**

The thickness of skinfold just superior to the nipple and parallel to the lateral margin of the pectoral muscle.

**juxtaposition**

A placing or being placed in nearness or contiguity (side by side).



# K

## K

See [Kelvin scale](#).

### **Kahler's disease**

Multiple myeloma.

### **kakidrosis**

The excretion of foul-smelling perspiration.

### **kala-azar**

A fatal epidemic fever of tropical Asia, resembling malaria, caused by *Leishmania donovani*, a protozoan parasite. The sand fly is the vector for this disease. Symptoms are usually vague, resembling those of incipient pulmonary tuberculosis. The disease is often confused with malaria. There may be fever, chills, malaise, cough, anorexia, and loss of weight. The *Leishmania* organisms multiply in the cells of the reticuloendothelial system, eventually causing hyperplasia of the cells, especially those of the liver and spleen. Diagnosis is confirmed by demonstration of the parasite.

### **Kanawha River ratchet**

*Maritime Safety*. A term for the placing of a "toothpick" or bar between a doubled-up line of barges to bring two barges together by twisting the bar around and around. A very dangerous practice.

### **Kan-sei engineering**

A system for developing consumer products in which the product is designed to have sensory and emotional appeal.

### **kaolinosis**

A pneumoconiosis resulting from the inhalation of kaolin clay dust.

### **Kaposi's disease**

(1) Xeroderma pigmentosum. (2) Kaposi's varicelliform eruption. (3) See [Kaposi's sarcoma](#).

### **Kaposi's sarcoma**

An opportunistic neoplasm associated with acquired immune deficiency syndrome (AIDS).

### **karst**

Terrain with the characteristics of relief and drainage arising from a high degree of rock

solubility in natural waters. The majority of karst occurs in limestone, but karst may also form in dolomite, gypsum, and salt deposits. Features associated with karst terrain typically include irregular topography, sinkholes, vertical shafts, abrupt ridges, caverns, abundant springs, and/or disappearing streams. Karst aquifers are associated with karst terrain.

### **karyotype**

The chromosomal elements typical of a cell, arranged according to the Denver classification and drawn in their true proportions, based on the average of measurements determined in a number of cells.

### **Kata thermometer**

An alcohol-based thermometer used for determining low air currents/velocities, in which the time required to cool from 100°F to 95°F corresponds to air velocity at that location.

### **katabatic wind**

Any wind blowing downslope, usually a cold wind.

### **kb**

Kilobyte(s). Approximately one thousand bytes.

### **kcal**

Kilocalorie(s).

### **kCi**

Kilocurie(s).

### **keelboat**

A long, flat-bottomed boat with a keel used to haul freight and passengers before the appearance of steamboats on the western rivers.

### **Kefauver-Cellar Act**

Federal anti-merger statute enacted in 1950 prohibiting the acquisition of assets of one company by another (generally in the same line of business) when the effect is to lessen competition.

### **K-electron capture**

The process wherein the electron in the K shell of an atom is captured by the nucleus during a nuclear reaction. In this process, a characteristic x-ray is emitted.

### **keloid**

(1) A mass of fibrous connective tissue, usually at the location of a scar. (2) A scar-like growth that rises above the skin surface, and is rounded, hard, shiny, and white, or some-

times pink. A keloid is a benign tumor that has its origin usually in a scar from surgery or a burn or other injury. Keloids are generally considered harmless and non-cancerous although they may produce contractures. Ordinarily they cause no trouble beyond an occasional itching sensation. Surgical removal is not usually effective because it results in a high rate of recurrence. However, radium and x-ray therapy often are of substantial help, provided care is taken not to destroy the surrounding healthy tissue.

**Kelvin scale**

A temperature scale with zero degrees equal to the theoretical temperature at which all molecular motion ceases. Also called the *absolute scale*.

**Kendall's coefficient of concordance (W)**

A measure of the degree of similarity in the rankings of a set of entities across two or more independent rank orderings of that set. Also referred to as *coefficient of concordance*.

**Keogh Plan**

A designation for retirement plans available to self-employed taxpayers (also referred to as H.R.10 plans). Such plans extend to the self-employed tax benefits similar to those available to employees under qualified pension and profit sharing plans. Yearly contributions to the plan (up to a certain amount) are tax deductible.

**keratin**

Tough, fibrous protein containing sulfur and forming the outer layer of epidermal structures, such as hair, nails, etc.

**keratitis**

Inflammation of the cornea. Keratitis may be deep, when the infection causing it is carried in the blood or spreads to the cornea from other parts of the eye, or superficial, caused by bacteria or virus infection or by allergic reaction. Microorganisms causing the inflammation can be introduced into the cornea during the removal of foreign bodies from the eye. All infections of the eye are potentially serious because opaque fibrous tissue or scar tissue may form on the cornea during the healing process and cause partial or total loss of vision. There are several kinds of keratitis. Dendritic keratitis is a viral form caused by the herpes simplex virus; it usually affects

only one eye. A bacterial form, acute serpiginous keratitis, may result from infection by pneumococci, streptococci, or staphylococci. Some kinds of keratitis (e.g., dendritic keratitis) may follow symptoms of upper respiratory tract infection, such as fever. Burns of the cornea, such as those produced by chemicals, or ultraviolet rays, also give rise to a form of keratitis. In trachoma, a contagious disease of the conjunctiva, the eyes become inflamed, and small, gritty particles develop on the cornea. Herpetic keratitis may accompany herpes zoster. Interstitial keratitis is often caused by congenital syphilis, although occasionally, it may also result from acquired syphilis. When caused by congenital syphilis, the disease usually appears when the child is between the ages of 5 and 15. In rare cases, interstitial keratitis may also stem from tuberculosis or rheumatic infection in other parts of the body. Symptoms vary somewhat among the different forms of keratitis, but pain, which may be severe, and inability to tolerate light (photophobia) are usual. There may be considerable effusion of tears and conjunctival discharge.

**keratoprotein**

The protein of the horny tissues of the body, such as the hair, nails, and epidermis.

**keratosis**

Any horny growth on the skin, such as a wart.

**kerogen**

The organic component of oil shale.

**kerosene**

A petroleum distillate that boils at a temperature between 300 and 550 degrees Fahrenheit, that has a flash point higher than 100 degrees Fahrenheit by ASTM Method D 56, that has a gravity range from 40 to 46 degrees API, and that has a burning point in the range of 150 degrees to 175 degrees Fahrenheit. Kerosene is used in space heaters, cook stoves, and water heaters and is suitable for use as an illuminant when burned in wick lamps. *See also fuel and gasoline.*

**kerosene-type jet fuel**

A quality kerosene product with an average gravity of 40.7 degrees API, and a 10 percent distillation temperature of 400 degrees Fahrenheit. It is covered by American Society of Testing Materials (ASTM) Specification

D1655 and Military Specification MIL-T-5624L (Grades JP-5 and JP-8). A relatively low-freezing point distillate of the kerosene type; it is used primarily for commercial turbojet and turboprop aircraft engines.

### **ketone**

(1) A class of liquid organic compounds that is derived by the oxidation of secondary alcohols. They are used as solvents in paints and explosives. (2) A chemical compound characterized by the presence of the bivalent carbonyl group ( $>C:O$ ).

### **ketone bodies**

Substances synthesized by the liver as a step in the combustion of fats; they are betaoxybutyric acid, acetoacetic acid, and acetone. Initially, the combustion of fatty acids produces ketones, which eventually are broken down into carbon dioxide and water by the liver and other tissues of the body. Under abnormal conditions, such as uncontrolled diabetes mellitus, starvation, or the intake of a diet composed almost entirely of fat, the breakdown of fatty acids may be halted at the ketone stage, causing increasing levels of ketone bodies in the blood. This condition is called *ketosis* and is directly related to improper utilization or inadequate supplies of carbohydrates, which are necessary for proper combustion of fats.

### **ketosis**

The accumulation of large quantities of ketone bodies in the body tissues and fluids. Ketosis is the result of incomplete combustion of fatty acids, which in turn is the result of improper utilization of, or lack of availability of, carbohydrates. When carbohydrates cannot be used as the source of energy, the body draws on its supply of fats. Deficiency of carbohydrates triggers several hormonal responses and greatly increases the removal of fatty acids from fatty tissues. As a result, large quantities of fatty acids must be oxidized, more in fact than the body cells can handle; thus their oxidation is incomplete and ketones accumulate in the blood and tissues. Ketosis may lead to severe acidosis because the ketone bodies beta-oxybutyric acid and acetoacetic acid decrease the blood pH and, more importantly, because when the ketone acids are excreted in the urine they take with them large quantities of sodium. The result is

a depletion of the alkaline part of the body's buffer system, so that the acid-base balance is upset in favor of acidosis. Ketosis occurs in uncontrolled diabetes mellitus because carbohydrates are not properly utilized, and in starvation because carbohydrates simply are not available for utilization. Ketosis is sometimes produced intentionally in the treatment of epilepsy by means of the ketogenic diet, which contains large amounts of fat and little carbohydrate or protein.

### **keV**

An abbreviation for kilo-electron volt and equal to 1000 electron volts.

### **kevel**

Colloquial term used for a large steel cleat secured to the deck of a boat or a barge, used for securing, mooring, and towing lines. It is provided with two prongs called "horn." Also spelled "cavil," "cavel," "caval."

### **key click**

An audible click which is presented whenever a keystroke is performed on a keyboard or keypad. Provides feedback to the user that a keystroke was made.

### **key event**

One incident which is primarily responsible for the time, place, and severity of an accident or other significant happening.

### **key job**

A job which has been evaluated itself and may be used as a benchmark for evaluating other similar, non-key jobs or work classes for evaluation, classification, and/or wage establishment purposes in the same company or industry.

### **key repeat rate**

The repeat rate with a keyboard key when continuously depressed, providing the number of characters input per second.

### **keyboard**

A computer input device or typewriter keying mechanism consisting of a panel containing alphanumeric, grammatical, function, and/or other keys for typing information/data entry to a computer or onto hardcopy.



*The standard computer keyboard*

**keypad**

A data entry pad consisting of the numeric keys 0-9, simple arithmetic function keys, a decimal key, and an enter key.

**keypunch**

An electromechanical device with a keyboard which punches holes in a card or onto tape (an older term).

**keystroke**

The depression of a key on a keyboard with a force greater than the actuation force for that key.

**kg**

1 kilogram (1000 g or 1,000,000 mg).

**kgf**

See *kilogram force*.

**kick down**

*Transit (slang)*. Shift down to lower gear.

**kick line**

*Maritime*. A line used to hold a towboat while the stern is being backed in so that the head will swing out into the stream.

**kick the donuts**

*Transit (slang)*. To check the tires of a truck or other vehicle for proper inflation.

**kickback**

(1) The reaction of a piece of material back toward the operator as it is being fed into a mechanical processing device and meets the cutting or processing tool. A serious and potentially dangerous phenomenon. (2) The unlawful receipt of funds or other items of value as a type of payment or reward for work performed.

**kickplate**

Any vertical structure or covering device on or near the floor which protects the surface it covers from impact or which prevents accidental entry of the shoe/toes into a region which might be hazardous.

**kidney**

One of two glandular organs, almost bean-shaped located in the lumbar region, that secrete urine. Their function is to regulate the content of water and other substances in the blood, and to remove from the blood various wastes. In an average adult, each kidney is about 4 inches long, 2 inches wide, and 1 inch thick, and weighs 4 to 6 ounces. In this small area, the kidney contains over a million microscopic filtering units (called nephrons). Blood arrives at the kidney by way of the renal artery, and is distributed through arterioles into many millions of capillaries which lead to the nephrons. Fluids and dissolved salts in the blood pass through the walls of the capillaries, and are collected within the central capsule of each nephron, the malpighian capsule. The glomerulus, a tuft of capillaries within the capsule, acts as a semipermeable membrane permitting a protein-free ultrafiltrate of plasma to pass through. This filtrate is forced into hairpin-shaped collecting channels in the nephrons, called tubules. Capillaries in the walls of the tubules reabsorb the water and the salts required by the body and deliver them to a system in the kidney veins which, in turn, carry them into the renal veins and return them to the general circulation. Excess water and other waste materials remain in the tubules as urine. The urine contains, besides water, a quantity of urea, uric acid, yellow pigments, amino acids, and trace metals. The urine moves through a system of ducts into a collecting funnel (renal pelvis) in each kidney, where it is then lead into the two ureters. About 1.5 quarts (1500 cc) of urine are excreted daily by the average adult. The urine efficiency of the normal kidney is one of the most remarkable aspects of the body. It has a filtering capacity of a quart of blood per minute (or 15 gallons per hour, or 360 gallons per day). Ordinarily, it draws off from the blood about 180 quarts of fluid daily, and returns usually 98 to 99 percent of the water plus the useful dissolved salts, according to the body's changing needs.



*Cross section of the human kidney*

**kidney buster**

*Transit (slang).* A hard riding truck.

**kilo-**

*(prefix)* One thousand or  $10^3$  times a base unit.

**kilo electron volt**

One thousand electron volts (KeV).

**kilocalorie (kcal)**

*See Calorie.*

**kilogram**

(1) One thousand grams. (2) An international standard unit of mass in the SI/MKS system, corresponding to a specific platinum-iridium alloy mass.

**kilogram force (kgf)**

A force equivalent to that which the earth's gravity exerts on a one kilogram mass at the earth's surface.

**kilogram-meter**

A unit of work, representing the energy required to raise 1 kg. of weight 1 meter vertically against gravitational force.

**kiloliter**

One thousand liters (264 gallons).

**kilopascal**

A unit of pressure equal to one thousand pascals. One pound per square inch (psi) of pressure is equivalent to 6.894757 kilopascals.

**kilovolt (kV)**

The unit of electrical potential equal to 1000 volts.

**kilowatt (kW)**

One thousand watts.

**kilowatt electric**

One thousand watts of electric capacity.

**kilowatt hour**

One thousand watt/hours.

**kinanthropometry**

The study of human nutrition, growth, development, maturation, size, shape, proportion, body function, and body composition to understand and improve upon health and performance.

**kinase**

- (1) An enzyme that catalyzes the transfer of a high-energy group of donors to an acceptor.
- (2) An enzyme that activates a zymogen.

**kinematic chain**

An open series of links or body segments, where the dimensions of each link are determined by the linear distance from one joint axis of rotation to another, with muscle mass and the type of articulation generally ignored.

**kinematics**

(1) The study of the geometry of motion without consideration of causal factors. (2) A technique which allows a computer graphics system to stimulate the movement of part or all of an image.

**kinesimeter**

A device which makes it possible to obtain quantitative measures of body motion, including displacement, velocity, and acceleration.

**kinesiology**

The study of movement of the human musculature.

**kinesis**

Objective physical body movement.

**kinesthesia**

That sense which originates in the stimulation of mechanoreceptors in joints, muscles, and/or

tendons and leads to awareness of position, movement, weight, and/or resistance of the limbs or other body parts.

**kinesthesiometer**

A device for measuring an individual's ability to sense body part position or movement.

**kinetic**

Pertaining to movement or motion.

**kinetic art**

The use of objects in motion as an expression of creativity.

**kinetic energy**

(1) The energy that a body possesses by virtue of its mass and velocity, or the energy of motion. (2) That portion of the energy of an object resulting from its motion. Expressed as:

$$KE = \frac{mv^2}{2}$$

where:

$m$  = mass

$v$  = velocity

**kinetic friction**

That friction between two surfaces in contact where there is relative motion between them.

**kinetic rate coefficient**

A number that describes the rate at which a water constituent, such as a biochemical oxygen demand or dissolved oxygen, increases or decreases.

**kinetics**

The study or use of the effects of mechanical forces and moments on material objects or to produce motion, especially of the human body.

**kinetosphere**

A reach envelope for the hand/arm combination or the leg/foot combination in which only translational motion of the limb is permitted, with the terminal segment (hand or foot) held in a constant position.

**kingdom**

One of the three major categories into which natural objects are usually classified: the animal (including all animals), the plant (including all plants) and the mineral (including all substances and objects without life).

**king-pin saddle-mount**

*Transportation.* That device which is used to connect the "upper-half" to the "lower-half" [of a "saddle-mount"] in such manner as to permit relative movement in a horizontal plane between the towed and towing vehicles.

**Kirschner wire**

A steel wire for skeletal transfixion of fractured bones and for obtaining skeletal traction in fractures. It is inserted through the soft parts and the bone and held tight in a clamp.

**kiss and ride**

*Transit (slang).* A place where commuters are driven and dropped off at a station to board a public transportation vehicle.

**kitchen**

A location in restaurants, homes, and some vehicles in which food is prepared for consumption. *See also galley.*

**knee**

The junction of the femur, tibia, fibula, and patella, including all surrounding tissues. The knee is a complex hinge joint, one of the largest in the body, and one that sustains great pressure.

**knee breadth**

The horizontal linear distance between the most medial and lateral projections of the femoral epicondyles. Measured using firm pressure with the individual standing erect and with no excessive leg muscle tension. Also referred to as *femoral breadth*.

**knee cap**

*See patella.*

**knee circumference, fully bent**

The distance around the maximum knee prominence and through the crease behind the knee. Measured with the individual in a squatting position with the knee joint maximally flexed.

**knee circumference, sitting**

The maximum surface distance around the knee, under the popliteal area and over the kneecap at an angle of 45° to the floor. Measured with the individual sitting erect, the upper leg horizontal, the lower leg vertical, and the foot flat on the floor.



**knee circumference, standing**

The surface distance around the knee measured at the level of the midpoint of the patella. Measured with the individual standing erect and his/her weight evenly distributed on both feet.

**knee height, recumbent**

The horizontal linear distance from the base of the heel to the anterior surface of the thigh at the femoral condyle. Measured with the knee flexed 90° and the longitudinal axis of the foot perpendicular to the longitudinal axis of the lower leg.

**knee height, sitting**

The vertical distance from the floor or other reference surface to the most superior part of the quadriceps musculature above the knee. Measured with the individual sitting, the knee flexed 90°, the foot flat on the floor/reference surface, and the lower leg vertical.

**knee – knee breadth, sitting**

The maximum horizontal linear distance between the lateral surface from one knee to the lateral surface of the other knee. Measured with the individual sitting erect, the knees flexed at right angles, and both knees touching but without significant tissue compression.

**knee pad**

A cushion for placement over the patella, usually having a strap or other attachment device around the knee, to protect against injury from kneeling or impacts between the anterior knee and other objects.

**knee switch**

An uniaxial control device which is operated by a lateral movement of the knee.

**knee well**

That region from the edge and extending under a table, desk, or other seated workstation which accommodates the legs in a seated posture, usually with the knees flexed.

**knee well depth**

The horizontal distance from the user's edge of a table, desk, or other seated workstation platform to a terminus against a wall or vertical panel on the opposite side.

**knee well height**

The vertical height from the floor or other reference level to the underside or lower surface of the structure forming a knee well.

**knee well width**

The horizontal distance from one side of a knee well to the other.

**knob**

A cover for placement on a rotational device or mechanism which normally protrudes from a surface for easier gripping and turning.

**knocked down**

*(slang)*. Unassembled freight or merchandise.

**knockout**

*Maritime (slang)*. To release a towboat from tow.

**knockout single**

*Maritime (slang)*. To uncouple the towboat and lay alongside the barges for single lockage. Also called *single set over*.

**knot**

(1) A unit of speed equal to 1 natural mile per hour, or 6,080.20 feet per hour or 1.85 kilometers per hour. 1 knot equals 1.15 mph. (2) A branch or limb, imbedded in a tree and cut through in the process of lumber manufacture, classified according to size, quality, and occurrence. The size of the knot is determined as the average diameter on the surface of the piece of wood.

**knowing endangerment**

Knowing that one is placing another person in imminent danger of death or serious bodily injury.

**knowledge-based behavior**

A cognitive operating mode in which the individual attempts to achieve a goal in a situation with no clearly pre-established rules.

**knowledge engineering**

The process of identifying what information must be gathered, obtaining that information from one or more recognized experts, and organizing it into a rule structure to be used in decision-making for a specific problem.

**knuckle**

The protuberance of the heads of the metacarpals when the hand is clenched into a fist, or the protuberance at the interphalangeal joints when the fingers are flexed.

**knuckle height**

The vertical distance from the floor to the point of maximum protrusion of the metacarpal III knuckle. Measured with the individual

standing erect, the arm adducted to the side of the body, the palm flat against the side of the thigh, and the fingers extended.

**knurled**

Pertaining to a surface texture with small ridges, generally for providing a more firm grip.

**Koch's law**

For a given organism to be established as the cause of a given disease, the following conditions must be fulfilled: a) the microorganism is present in every case of the disease; b) it is to be cultivated in pure culture; c) inoculation of such culture must produce the disease in susceptible animals; d) it must be obtained from such animals, and again grown in a pure culture.

**Koehler illumination**

A type of illumination used in microscopy in which the light source is imaged in the aperture of the system and the lamp condenser is imaged in the specimen plane in order to obtain even brightness in the field of view and optimum resolving power of the microscope system.

**Kolmer test**

A complement-fixation technique used in the diagnosis of syphilis or other infections.

**konimeter**

A device for sampling airborne dust.

**Korsakoff's syndrome**

A mental disorder associated with chronic alcoholism and caused in part by vitamin B<sub>1</sub> (thiamine) deficiency. Characteristics include disturbances of orientation, memory defect, susceptibility to external stimulation and suggestion and hallucinations. There is irreversible brain damage; confinement to an institution is a frequent outcome of the condition.

**kort nozzles**

Cylindrical devices which surround the towboat propellers to increase the maneuverability and efficiency of the towboat.

**kPa**

Kilopascal(s).

**kPa abs**

Absolute pressure in kilopascals.

**Kraepelin's classification**

A classification of the manic-depressive and schizophrenic groups of mental disease.

**krebiozen**

A substance alleged to be capable of curing cancer.

**Kretschmer somatotype**

A body structure classification system developed by Ernst Kretschmer, supposedly to represent human character traits, in which men are divided into three basic groups; pyknic, athletic, and asthenic. An old system, no longer in use. *See also asthenic, pyknic, and athletic.*

**krypton**

A chemical element, atomic number 36, atomic weight 83.80, symbol Kr.

**Kümmel's disease**

A form of spondylitis of unknown origin or occurring at a great interval after the injury causing it, with collapse of the vertebra and thinning of the intervertebral disks.

**kurtosis**

A measure of the peak of a distribution, based on the fourth moment about the mean.

**kuru**

Disease in humans caused by a virus that affects the central nervous system and can be transmitted to subhuman primates.

**Kussmaul disease**

An inflammatory disease of the coatings of the small and medium-sized arteries of the body with inflammatory changes around the vessels and marked symptoms of systemic infection.

**kV**

Kilovolt(s).

**kVp**

Kilovolt peak.

**kW**

Kilowatt(s).

**kymograph**

An electromechanical device consisting of a rotating smoked drum or paper-covered cylinder with one or more styli for recording time-based events.

**kyphoscoliosis**

Backward and lateral curvature of the spine, such as that seen in vertebral osteochondritis (Scheuermann's disease).

**kyphosis**

A posture of the lumbar spine caused by bending forward, such as over a work bench or poorly positioned computer terminal, and involving reverse curvature of the spine.

**kyrtorrhachic**

Having a vertebral column in which the lumbar curvature is anteriorly convex.

# L

## L

Liter(s). Also, see *lambert*.

### L-1 maneuver

An anti-g straining maneuver for preventing gravity-induced loss of consciousness during high positive acceleration forces in high performance spacecraft, in which the crew member strains his skeletal body muscles and closes the glottis for a few seconds, then inhales and exhales rapidly before repeating the process. Also known as the *Leverett technique*. See also *anti-g straining maneuver*.

### LAA

See *local airport advisory*.

### LAAS

See *low altitude airway structure*. See also *low altitude alert system*.

### Laban notation

A systematic method for describing body position in the field of dance.

### label

(1) A descriptor of the contents of some container, which may include such information as the product name, manufacturer, amount present, instructions, and any warning(s). (2) Under the Federal Food, Drug, and Cosmetic Act: The written, printed, or graphic matter upon the immediate container or wrappers of any article or accompanying such article. (3) Under noise abatement program requirements, that item which is inscribed on, affixed to, or appended to a product, its packaging, or both for the purpose of giving noise reduction effectiveness information appropriate to the product. (4) A descriptor which helps to identify displayed screen or control structures.

### label coding

The use of text, numerals, symbols, or other means to identify a control, device, or system.

### labeled

Equipment is considered "labeled" if there is attached to it a label, symbol, or other identifying mark of a nationally recognized testing laboratory which a) makes periodic inspections of the production of such equipment, and b) whose labeling indicates compliance

with nationally recognized standards or tests to determine safe use in a specified manner.

### labeled molecule

A molecule containing one or more atoms distinguished by non-natural isotopic composition (with radioactive or stable isotopes).

### labeling

Under the Federal Insecticide, Fungicide, and Rodenticide Act: All labels and all other written, printed, or graphic matter accompanying the pesticide or device at any time; or to which reference is made on the label in literature accompanying the pesticide or device except to current official publications of the EPA, the United States Departments of Agriculture and Interior, the Department of Health and Human Services, state experiment stations, state agricultural colleges, and other similar federal or state institutions or agencies authorized by law to conduct research in the field of pesticides.

### labial

Pertaining to a lip, or labium.

### labialism

Defective speech with the use of labial sound.

### labile

(1) Gliding; moving from point to point over the surface; unstable. (2) Chemically unstable.

### lability

The quality of being labile. In psychiatry, emotional instability; a tendency to show alternating states of happiness and somberness.

### labiodental

Articulated with the lower lip touching the upper central incisors.

### labium

A lip or lip-shaped structure.

### labor

(1) The process of doing work, especially that involving physical effort. (2) A group of individuals consisting of or representing those working for hourly wages. (3) Work; toil; service; mental or physical exertion. (4) The function of the female organism by which the product of conception is expelled from the uterus through the vagina to the outside world.

**labor a jury**

To tamper with a jury; to endeavor to influence them in their verdict, or their verdict generally (jury tampering is a crime under 18 U.S.C.A. §§ 1503, 1504).

**labor agreement**

See *labor contract*.

**labor contract**

A contract between employer and employees (i.e., union) which governs working conditions, wages, fringe benefits, and grievances.

**labor cost**

The portion of an employer's total cost of doing business which is attributable to wages and salaries, benefits, and other aspects of employment practices.

**labor dispute**

Term generally includes any controversy between employers and employees concerning terms, tenure, hours, wages, fringe benefits, or conditions of employment, or concerning the association or representation of persons in negotiating, fixing, maintaining, changing, or seeking to arrange terms or conditions of employment. However, it should be noted that not every activity of a labor organization and not even every controversy in which it may become involved are considered a "labor dispute" within the National Labor Relations Act.

**labor-management relations**

General term to describe the broad spectrum of activities which concern the relationship of employees to employers, both union and non-union

**Labor-Management Relations Act**

Federal statute (formally: Taft-Hartley Act) which regulates certain union activities, permits suits against unions for proscribed acts, prohibits certain strikes and boycotts, and provides machinery for settling strikes which involve national emergencies.

**labor organization**

An organization of any kind, or any agency or employee representation committee, group, association, or plan so engaged in which employees participate and which exists for the purpose, in whole or in part, of dealing with employers concerning grievances, labor disputes, wages, rates of pay, hours, or other

terms or conditions of employment, and any conference, general committee, joint system board, or joint council so engaged which is subordinate to a national or international labor organization, other than a state or local central body.

**labor picketing**

The act of patrolling in motion at or near the employer or customer entrance; usually carrying placards with a terse legend or message communicating the basic gist of the union's claims. Certain forms are prohibited.

**labor relations acts**

State and federal laws that regulate relations between employers and employees.

**labor turnover**

A measure of how many employees enter and leave a particular workplace within a specified interval.

**labor union**

A combination or association of workers organized for the purpose of securing favorable wages, improved labor conditions, better hours of labor, etc., and righting grievances against employers. Such unions normally represent trades, crafts, and other skilled workers (e.g., machinists, electricians, etc.).

**laboratory**

A place for making tests or doing experimental work.

**laboratory blank**

Reagent laboratory grade water which is analyzed in the same way as field samples.

**laboratory duplicates**

Unmarked samples whose results help to ensure quality control.

**laboratory hood**

A ventilated enclosure designed to capture, contain, control, and remove gases, vapors, and particles generated within the enclosure.

**laboratory study**

An experimental study conducted in an environment in which the experimenter(s) have some degree of control over the variables involved in the phenomenon of interest.

**laboratory ventilation**

Air-moving systems and equipment which serve laboratories.

**laborer**

The word ordinarily denotes one who subsists by physical labor. One who, as a means of livelihood, performs work and labor for another. Any person who follows any legitimate employment or discharges the duties of any office.

**laboring**

*Maritime.* The effect of shallow water on the sound or performance of the boat's engine.

**labyrinth**

(1) A complicate maze. (2) See *inner ear*.

**labyrinthine nystagmus**

See *vestibular nystagmus*.

**laceration**

A wound caused by the tearing of body tissues, as distinguished from a cut or incision. External lacerations may be small or large and may be caused in many ways. Some common causes of lacerations are a blow from a blunt instrument, a fall against a rough surface, and an accident with machinery. A laceration may be a ragged tear with many tag ends of skin or a torn flap of skin and flesh. Although the bleeding may be less than that caused by a cut, the danger of infection may be greater. In a laceration there is likely to be more damage to surrounding tissue, with a greater area exposed. Because of the danger of infection, cleaning the laceration is the first and most important step in treatment. Lacerations within the body occur when an organ is compressed or moved out of place by an external or internal force. This kind of laceration may result from a blow that does not penetrate the skin. Surgical repair is usually necessary for internal lacerations.

**lachrymation**

See *lacrimation*.

**lack of jurisdiction**

The phrase may mean a lack of power of a court to act in a particular manner or to give certain kinds of relief.

**lacrimal**

Pertaining to tears.

**lacrimal bone**

A small bone making up part of the medial orbit of the skull.

**lacrimation**

The excessive secretion and discharge of tears. Also spelled *lachrymation*.

**lacrimator**

A substance, such as a gas, that increases the flow of tears.

**lactase**

An enzyme that catalyzes the conversion of lactose into glucose and galactose.

**lactic acid**

A three-carbon organic acid product of anaerobic metabolism in tissue, especially muscle tissue.

**ladder**

An appliance usually consisting of two side rails joined at regular intervals by cross-pieces called steps, rungs, or cleats, on which a person may step in ascending or descending.

**ladder jack scaffold**

A light duty scaffold supported by brackets attached to ladders.

**ladder safety device**

Any device, other than a cage or well, designed to eliminate or reduce the possibility of accidental falls and which may incorporate such features as life belts, friction brakes, and sliding attachments. See also *cage and well*.

**laden in bulk**

A term of maritime law, applied to a vessel which is freighted with a cargo which is neither in casks, boxes, bales, nor cases, but lies loose in the hold, being defended from wet or moisture by a number of mats and a quantity of dunnage. Cargoes of corn, salt, etc. are usually shipped in this manner.

**lading**

Refers to the freight shipped; the contents of a shipment.

**lag**

(1) The period of time by which a second event trails the leading event. (2) That distance at which a second moving object trails a leading object.

**lag time**

See *dead time*.

**lagging**

An acoustical treatment involving the encapsulation of vibrating structures or ducts con-



taining fluid-borne noise in order to reduce radiated noise.

**lagoon**

(1) A shallow pond where sunlight, bacterial action, and oxygen work to purify wastewater; also used for the storage of wastewater or spent nuclear fuel rods. (2) Shallow body of water, often separated from the sea by coral reefs or sandbars. The sheet of water between an offshore reef, especially of coral, and the mainland. The sheet of water within a ring or horseshoe-shaped atoll.

**lake**

(1) Any standing body of inland water. (2) A considerable body of standing water in a depression of land or expanded part of a river. (3) An inland body of water or naturally enclosed basin serving to drain the surrounding land; or a body of water of considerable size surrounded by land; a widened portion of a river or a lagoon. (4) A body of water, more or less stagnant, in which the water is supplied from drainage. (5) An inland body of water of considerable size occupying a natural basin or depression in the earth's surface below the ordinary drainage level of the region.

**lake breeze**

A wind blowing onshore from the surface of a lake.

**lake-effect snow**

Localized snowstorm that forms on the downward side of a lake. Such storms are common in late fall and early winter near the Great Lakes as cold, dry air picks up moisture and warmth from the unfrozen bodies of water.

**lake/pond**

A standing body of water with a predominantly natural shoreline surrounded by land.

**lakewise or Great Lakes**

These terms apply to traffic between U.S. ports of the Great Lakes system. The Great Lakes system is treated as a separate system rather than as a part of the inland system.

**lambert (L)**

A unit of luminance; equals  $1/\pi$  candela per  $\text{cm}^2$  (an older term).

**lambert surface**

A reflecting or emitting surface whose brightness appears to be the same regardless of the angle of observation.

**Lambert's cosine law**

A law providing that the luminous intensity from a perfectly diffusing surface varies with the cosine of the angle between the perpendicular and the direction of interest.

**lame duck**

(1) An elected officeholder who is to be succeeded by another, between the time of the election and the date that his/her successor is to take office. (2) A speculator in stock who has overbought and cannot meet his/her commitments.

**Lame Duck Amendment**

Popular name for the Twentieth Amendment to the U.S. Constitution, abolishing the short congressional term.

**lame duck session**

Legislative session conducted after election of new members but before they are installed, and hence one in which some participants are voting for the last time as elected officials because of their failure to become reelected or due to voluntary retirement.

**laminar flow**

Ideally, air flow in which air molecules travel parallel to all other molecules; flow characterized by the absence of turbulence. Also known as *streamline flow*.

**laminar flow clean room**

A room with laminar air flow and Class 10,000 Clean Room or better.

**laminectomy**

Surgical excision of the posterior arch of a vertebra. The procedure is most often performed to relieve the symptoms of a ruptured intervertebral disk (slipped disk). When several disks are involved, spinal fusion may be performed so that the vertebrae in the affected area will remain in a fixed position. Bone grafts, usually taken from the iliac crest, are applied to fuse the affected vertebrae permanently, resulting in limitation of movement of this portion of the spine. Laminectomy is also performed for the removal of an intervertebral or spinal cord tumor.

**lamp**

A device used to produce artificial heat or light.

**lamp burnout (LBO)**

The cessation of light output from an artificial source. A recoverable light loss factor.

**lamp burnout factor**

The proportional loss of illuminance from the non-replacement of burned out lamps.

**LAN**

See *Local Area Network*.

**land**

(1) *General*. Any ground, soil, or earth whatsoever; including fields, meadows, pastures, woods, moors, waters, marshes, and rock. (2) *Maritime*. To moor or bring a boat to the riverbank.

**land application**

Discharge of wastewater onto the ground for treatment or reuse. See also *irrigation*.

**land area**

Based on the U.S. Bureau of the Census definition, this includes dry land and land temporarily or partially covered by water, such as marshlands, swamps, and river flood plains, systems, sloughs, estuaries and canals less than 1/8 of a statute mile (0.2 kilometers) in width and lakes, reservoirs, and ponds less than 1/16 square mile (0.16 square kilometers) in area. [For Alaska, 1/2 mile (0.8 kilometers) and 1 square mile (2.60 square kilometers) are substituted for these values]. The net land area excludes areas of oceans, bays, sounds, etc. lying within the 3-mile (4.8 kilometers) U.S. jurisdiction as well as inland water areas larger than indicated above.

**land-ban**

Under RCRA, the mandated phasing out of land disposal of untreated hazardous waste.

**land breeze**

A coastal breeze that blows from land to sea, usually at night.

**land damages**

A term sometimes applied to the amount of compensation to be paid for land taken under the power of eminent domain or for injury to, or depreciation of, land adjoining that taken.

**land disposal**

According to the Federal Solid Waste Disposal Act, the term includes, but is not limited to, any placement of hazardous waste in a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome formation, salt bed formation, or underground mine or cave. See also *landfills*.

**land farming**

With regard to waste, a disposal process in which hazardous waste deposited on or in the soil is naturally degraded by microbes.

**land use**

(1) Under the Federal Coastal Zone Management Act of 1972: Activities which are conducted in or on the shore lands within the coastal zone. (2) Designates whether the general area in which a vehicle crash occurred is urban or rural, based on 1990 Census Data.

**land wall**

The concrete wall that forms part of the lock and is nearest to the land on the shore on which a lock chamber is constructed.

**landbridge**

An intermodal connection between two ocean carriers separated by a land mass, linked together in a seamless transaction by a land carrier. See also *intermodal* and *minibridge*.

**landed cost**

The dollar per barrel price of crude oil at the port of discharge. Included are the charges associated with the purchase, transporting, and insuring of a cargo from the purchase point to the port of discharge. Not included are charges incurred at the discharge port (e.g., import tariffs or fees, wharfage charges, and demurrage charges).

**landed weight**

The weight of an aircraft providing scheduled and non-scheduled service of only property (including mail) in intrastate, interstate, and foreign air transportation.

**landfills**

(1) Sanitary landfills are land disposal sites for nonhazardous solid wastes at which the waste is spread in layers, compacted to the smallest practical volume, and cover material is applied at the end of each operating day. (2) Secure chemical landfills are disposal sites for hazardous waste. They are selected and

designed to minimize the chance of release of hazardous substances into the environment.

**landing**

The level region at the bottom of a stair.

**landing area**

(1) Any locality either on land, water, or structures, including airports/heliports and intermediate landing fields, which is used, or intended to be used, for the landing and takeoff of aircraft whether or not facilities are provided for the shelter, servicing, or for receiving or discharging passengers or cargo. (2) That part of a movement area intended for the landing or takeoff of aircraft.

**landing direction indicator**

A device installed on the airport property which visually indicates the direction in which landings and takeoffs should be made (e.g., wind sock).

**landing distance available (LDA)**

The runway length declared available for landing an airplane.

**landing gear**

(1) *Trucking*. Device that supports the front end of semitrailer when not attached to a tractor. (2) *Aviation*. The wheels that support the aircraft during landing and while moving on the ground. The term generally includes all the components that support the wheel structures, not just the wheels themselves.

**landing gear extended speed**

The maximum speed at which an aircraft can be safely flown with the landing gear extended.

**landing gear operating speed**

The maximum speed at which the landing gear can be safely extended or retracted.

**landing minimums**

*Aviation*. The minimum visibility prescribed for landing a civil aircraft while using an instrument approach procedure. The minimum applies with other limitations set forth in Federal Aviation Regulation Part 91 with respect to the Minimum Descent Altitude (MDA) or Decision Height (DH) prescribed in the instrument approach procedures as follows: a) *Straight-in landing minimums*. A statement of MDA and visibility, or DH and visibility, required for a straight-in landing on a specified runway; or b) *Circling minimums*. A state-

ment of MDA and visibility required for the circle-to-land maneuver. Descent below the established MDA or DH is not authorized during an approach unless the aircraft is in a position from which a normal approach to the runway of intended landing can be made and adequate visual reference to required visual cues is maintained.

**landing place**

*Maritime*. A place for loading and unloading passengers or cargo to and from water vessels.

**landing rights airports**

Any aircraft may land at one of these airports after securing prior permission to land from U.S. Customs.

**landing roll**

The distance from the point of touchdown to the point where the aircraft can be brought to a stop or exit the runway.

**landing sequence**

The order in which aircraft are positioned for landing.

**landing signal**

*Maritime*. A prearranged signal which the towboats of some companies sound when approaching their dock.

**landmark**

(1) *General*. A fixed object serving as a boundary mark to a tract of land, as a guide to travelers, etc. A prominent object in the landscape. (2) *Ergonomics*. An easily located position on or near the body surface. Also known as *anatomical reference point*.

**Landolt C**

See *Landolt ring*.

**Landolt ring**

A ring having a small gap at some orientation, both the width of the gap and the ring thickness being one-fifth the outer diameter of the ring. For use in vision testing, in which the observer is expected to report the orientation of the gap.

**Landrum-Griffin Act**

Federal statute enacted in 1959, known as the Labor-Management Reporting and Disclosure Act, designed to curb corruption in union leadership and undemocratic conduct of internal union affairs as well as to outlaw certain types of secondary boycotts and "hot cargo"

provisions in collective bargaining agreements.

**landscaping**

Colloquial term meaning to clear shore structure of brush and vegetation in order to obtain optimum range of visibility. *See also brush out.*

**Landsteiner's classification**

A classification of blood types in which they are designated O, A, B, and AB, depending on the presence or absence of agglutinogens A and B in the erythrocytes. Also called international classification.

**lane**

(1) A prescribed course for ships or aircraft, or a strip delineated on a road to accommodate a single line of automobiles; not to be confused with the road itself. (2) A portion of a street or highway, usually indicated by pavement markings, that is intended for one line of vehicles.

**Langerhans' islands**

Masses in the pancreas composed of cells smaller than the ordinary cells; they produced the hormone insulin and their degeneration is one of the causes of diabetes mellitus.

**Langer's line**

*See cleavage line.*

**LANL**

Los Alamos National Laboratory (previously referred to a Los Alamos Scientific Laboratory or LASL).

**lanolin**

Wool fat or wool grease that is refined and incorporated into many commercial preparations. Lanolin is a byproduct of the process that accompanies the removal of sheep's wool from the pelt. In its crude form, it is a greasy yellow wax of unpleasant odor. This odor disappears when the lanolin is emulsified and made into salves, creams, ointments, and cosmetics. Although lanolin is slightly antiseptic, it has no other medicinal benefits and is valuable principally because of the ease with which it penetrates the skin, and because it does not turn rancid.

**lanthanum**

A chemical element, atomic number 57, atomic weight 138.91, symbol La.

**lap**

That region formed by the upper thighs to the junction of the lower abdomen with the body in an erect sitting posture.

**lap belt**

*See seat belt.*

**lapse rate**

The rate at which an atmospheric variable, usually temperature, decreases with height. *See also environmental lapse rate.*

**large air carrier**

Scheduled and nonscheduled aircraft operating under Federal Aviation Regulation (FAR) Parts 121 or 127. *Note:* Part 129 operations (foreign air carriers) are not included in the National Transportation Safety Board (NTSB) accident database, nor are hour and departure data available for these air carriers.

**large air traffic hub**

A community enplaning 1.00 percent or more of the total enplaned passengers in all services and all operations for all communities within the 50 States, the District of Columbia, and other U.S. areas designated by the Federal Aviation Administration.

**large aircraft**

Aircraft of more than 12,500 pounds, maximum certificated takeoff weight.

**large aircraft commercial operator**

Commercial operator operating aircraft with 30 seats or more or a maximum payload capacity of 7,500 pounds or more. Also, a commercial operator aircraft of more than 12,500 pounds maximum certificated takeoff weight.

**large calorie**

*See Calorie.*

**large certificated air carrier**

An air carrier holding a Certificate of Public Convenience and Necessity that a) operates aircraft designed to have a maximum passenger seating capacity of more than 60 seats, or b) maximum payload capacity of more than 18,000 pounds.

**large fleet**

A fleet of 2,000 or more reportable vehicles, domestic or foreign, for which accountability is held by a department, independent establishment, bureau, or a comparable organiza-

tional unit of that department or independent establishment.

**large nuclei**

See *condensation nuclei*.

**large quantity generator**

Generators producing more than 1000 kilograms per month of hazardous real estate.

**large regional carrier group**

Air carrier groups with operating revenues between \$20,000,000 and \$99,000,000.

**large truck**

Trucks over 10,000 pounds gross vehicle weight rating, including single unit trucks and truck tractors.

**larva**

The first or worm-like stage of an insect on issuing from the egg.

**laryngectomy**

Partial or total removal of the larynx by surgery. It is usually performed as treatment for cancer of the larynx. The person learns afterward to speak without his/her voice box.

**laryngitis**

Inflammation of the mucous membrane of the larynx affecting the voice and breathing. Laryngitis may be acute or chronic, or may occur in other forms. Acute laryngitis may be caused by overuse of the voice, allergies, irritating dust or smoke, hot or corrosive liquids, or even violent weeping. It also occurs in viral or bacterial infections, and is frequently associated with other diseases of the respiratory tract. In adults, a mild case of acute laryngitis begins with a dry, tickling sensation in the larynx, followed quickly by partial or complete loss of the voice. There may be a slight fever, minor discomfort, and poor appetite, with recovery after a few days. Other and more uncomfortable symptoms can include a feeling of heat and pain in the throat, difficulty in swallowing, and dry cough followed by expectoration; the voice may be either painful to use or absent. Swelling of the larynx and epiglottis may impair breathing. Increasing difficulty in breathing may be a sign of edematous laryngitis, or croup. After repeated attacks of acute laryngitis, chronic laryngitis may develop. This is caused mostly by continual irritation from overuse of the voice, tobacco smoke, dust, or chemical va-

pers, or by a chronic nasal or sinus disorder. Often, the moist mucous membrane lining the larynx becomes granulated. The granulation can proceed to thickening and hardening of the mucous membrane, which changes the voice or makes it hoarse. There is little or no pain, though there may be tickling in the throat and a slight cough. Chronic laryngitis that has persisted for a number of years may result in chronic hypertrophic laryngitis, a condition in which there is a permanent change in the voice because of hypertrophy of the membrane lining the larynx.

**laryngopharynx**

The lowest portion of the pharynx which extends from the level of the hyoid bone to the junction of the esophagus and larynx.

**laryngoscopy**

Direct visual examination of the larynx with a laryngoscope.

**larynx**

The essential sphincter guarding the entrance into the trachea and functioning secondarily as the organ of voice. The anterior protruding part forms the Adam's Apple. The larynx is a muscular and cartilaginous structure, lined with mucous membrane, situated at the top of the trachea and below the root of the tongue and the hyoid bone. The larynx contains the vocal cords, and is the source of the sound heard in speech (for this reason, it is also called the voice box). It is part of the respiratory system, and air passes through the larynx as it travels from the pharynx to the trachea and back again on its way to and from the lungs.

**larynx to wall**

The horizontal linear distance from the wall to the most anterior portion of the tissue overlying the thyroid cartilage. Measured with the individual standing erect, and with buttocks, shoulders, and occiput against the wall.

**laser**

Acronym for "light amplification by stimulated emission of radiation." Lasers are devices which convert electromagnetic radiation of mixed frequencies to one or more discrete frequencies of highly amplified and coherent visible radiation.

**LASH**

See *lighter-aboard-ship*.

**lashing**

*Maritime.* A comparatively short manila line with an eye spliced in one end, used to moor barges and tows when passing through locks. Its average length is about 60 feet with sizes varying from 1 3/4 to 3 inches in circumference. The line is thrown somewhat in the manner of a lasso (hence the eye spliced) to catch a wall pin or bollard so as to snub the movement of barges and then moor them in the lock chamber. Also, any short length of line used to secure two barges end to end or side by side.

**lasing medium**

With regard to lasers, the material which absorbs and emits laser radiation. Lasers can be classified according to the state of their lasing media (e.g., gas, liquid, solid, and semiconductor).

**LASL**

See *LANL*.

**lassitude**

Weakness or exhaustion.

**last assigned altitude**

The last altitude/flight level assigned by Air Traffic Control (ATC) and acknowledged by the pilot.

**last clear chance doctrine**

This doctrine permits a plaintiff in a negligence action to recover, notwithstanding his/her own negligence, on showing that the defendant had the last chance to avoid the accident. The doctrine imposes upon a person the duty to exercise ordinary care to avoid injury to another who has negligently put himself/herself in a position of peril, and who he/she can reasonably assume is unconscious or inattentive to peril or unable to avoid imminent harm.

**latch block**

*Transit.* The lower extremity of a latch rod which engages with a square shoulder of the segment or quadrant to hold the lever in position.

**latch shoe**

*Transit.* The casting by means of which the latch rod and the latch block are held to a lever of a mechanical interlocking machine.

**Late Quaternary**

See *Quaternary*.

**late radiation effects**

Those ionizing radiation effects which have a long latency.

**latency period**

The time interval between exposure to toxic chemical agents and the onset of signs and symptoms of illness.

**latent**

Present or potential, but not manifest.

**latent defect**

A hidden or concealed defect. One which could not be discovered by reasonable and customary observation or inspection; one not apparent on the face of goods, products, documents, etc.

**latent heat of fusion**

The amount of heat required to convert a unit mass of solid to liquid at the melting point.

**latent heat of vaporization**

The amount of heat required to convert a unit mass of substance from a liquid to a gas at a certain temperature.

**latent period**

The period of time between exposure to an injurious agent (chemical, physical, or biological) and the observation of an effect. It is the incubation period of an infectious disease. Also referred to as the latency period of a disease.

**lateral**

(1) Pertaining to, near, or toward the sides of the body or a symmetrical structure. (2) A consonant produced by closing off the midline of the mouth with the tongue, but allowing passage of air around one or both sides.

**lateral bending moment**

Those torques acting on the spine which result from sideways motion.

**lateral canthus**

See *ectocanthus*.

**lateral cricoarytenoid**

A skeletal muscle in the larynx which, on contraction, causes the glottis to close.

**lateral cuneiform bone**

One of the distal group of foot bones making up the tarsus.



**lateral dam**

Usually a rock and brush structure constructed parallel to normal stream flow to train or confine the current to a definite channel.

**lateral disparity**

See *binocular disparity*.

**lateral displacement**

See *abduct*.

**lateral exhaust hood**

A slot hood typically used to exhaust air contaminants from an open surface tank, and requiring full access to the top of the tank. The slots are narrow rectangular openings, usually located in a plenum at the rear of the tank opening. Also known simply as a *slot hood*.

**lateral fault**

A fault that slips in such a way that the two sides move with a predominantly lateral motion (with respect to each other). There are two kinds of lateral slip: right-lateral and left-lateral. They can be distinguished by standing on one side of the fault, facing the fault (and, of course, the other side), and noting which way the objects across the fault have moved with respect to you. If they have moved to your right, the fault is right-lateral. If the motion is to the left, then the fault is left-lateral.

**lateral inhibition**

A phenomenon in which neurons in the vicinity of a stimulation point, especially in sensory pathways, show reduced reactivity compared to those at the stimulation point.

**lateral malleolus**

The lateral protrusion of the fibula at the ankle.

**lateral malleolus height**

The vertical linear distance from the floor or other reference surface to the most lateral point of the lateral malleolus. Measured with the individual standing erect and his/her weight distributed equally on both feet.

**lateral railroad**

A lateral road is one which proceeds from some point on the main trunk between its terminal. An offshoot from the main line of the railroad.

**lateral rectus muscle**

A voluntary extraocular muscle with an anterior-posterior extent parallel to the optical axis

along the lateral eyeball for rotating the anterior portion of the eyeball to the side.

**lateral retinal image disparity**

See *binocular disparity*.

**lateral separation**

*Aviation*. The lateral spacing of aircraft at the same altitude by requiring operation on different routes or in different geographical locations.

**lateral sewers**

Pipes that run under city streets and receive the sewage from homes and businesses.

**lateral transfer**

A personnel reassignment to another position at the same or approximately the same level of salary or responsibility.

**laterality**

A concept that different functions and modes of operation are allocated to different sides of the brain.

**lateralization**

The localization of a dichotically presented sound via earphones in apparent space along an imaginary line connecting the two ears.

**launch vehicle**

A vehicle that carries and/or delivers a payload to a desired location. This is the generic term. It includes, but is not limited to, airplanes, all types of space launch vehicles, manned launch vehicles, missiles and rockets and their stages, probes, aerostats and balloons, drones, remotely piloted vehicles, projectiles, torpedoes, and air-dropped bodies.

**launching ramp**

A transportation structure used for launching boats.

**laundry booster**

Any substance or combination of substances intended to aid detergents in the removal of certain stains from fabrics.

**lavage**

Irrigation or washing out an organ or cavity, especially the stomach or intestine. *Gastric lavage*, or irrigation of the stomach, is usually done to remove ingested poisons. It also may be employed as an emergency operation if there is danger of vomiting and aspiration during anesthesia, or in cases of persistent vomiting.

**law**

That which is laid down, ordained, or established. Law, in its generic sense, is a body of rules of action or conduct prescribed by a controlling authority, and having binding legal force.

**law of inertia**

See *Newton's first law of motion*.

**law of reflection**

A physical law that an energy wave is reflected from a surface at an equal angle from the perpendicular as the incident wave, and both are in the same plane.

**lawful arrest**

The taking of a person into legal custody either under a valid warrant or on probable cause, believing that he/she has committed a crime, or under civil process which permits his/her arrest.

**lawful authorities**

Those persons who have the right to exercise public power, to require obedience to their lawful commands, to command or act in the public name.

**lawful cause**

Legitimate reason for acting, based on the law or on the evidence in a particular case as contrasted with acting on a whim or out of prejudice, or for a reason not recognized by the law.

**lawrencium**

A chemical element, atomic number 103, atomic weight 257, symbol Lw.

**laws**

Rules promulgated by the government as a means to an orderly society.

**lawsuit**

A vernacular term for a suit, action, or cause instituted or pending between two private persons in the courts of law. See also *suit*.

**lawyer**

A person learned in the law; as an attorney, counsel, or solicitor; a person licensed to practice law.

**laxative**

A medicine that loosens the bowel contents and encourages evacuation. A laxative with a mild or gentle effect on the bowels is also

known as an aperient; one with a strong effect is referred to as a cathartic or a purgative.

**lay on the air**

*Transit (slang)*. Apply brakes.

**lay witness**

A person called to give testimony who does not possess any expertise in the matters about which he/she testifies.

**layer**

A cross-section through a three-dimensional object or computer model.

**layering**

The use of multiple display windows, allowing them to overlap and partially or completely hide the contents of the covered windows.

**layoff**

A termination of employment at the will of the employer. Layoffs can be temporary or permanent.

**layover**

Eight hours or more rest before continuing a trip or any off-duty period away from home.

**lazy foot rule**

A workplace design guideline that guards and lock out switches should be easily removable and replaceable so that workers will replace them.

**lb**

Pound(s).

**lb/ft<sup>3</sup>**

Pounds per cubic foot.

**LBB**

See *leak before burst*.

**LBO**

See *lamp burnout*.

**LBP**

See *lead-based paint*.

**LC**

(1) Lethal concentration. (2) Liquid chromatography.

**LC<sub>50</sub>**

A standard measure of acute toxicity, normally applied to inhalation hazards but may also be applied in some cases to concentrations in water (or solution), designating the median *lethal concentration* of a chemical

that is estimated to kill 50% of the exposed organisms in a specific period of time and under a specific set of conditions. It is typically represented as micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ).  $\text{LC}_{50}$  is used in the Hazard Ranking System in assessing acute toxicity.

**LCG**

See *liquefied compressed gas*.

**LCL**

See *lifting condensation level*.

**LD**

(1) Lethal dose. (2) Legionnaire's disease.

**LDA**

See *landing distance available*.

**LDAR**

Leak detection and repair program for fugitive emission sources.

**Ldn**

Average day-night sound level.

**LD 0**

The highest concentration and dosage of a toxic substance that kills test organisms.

**LD<sub>50</sub>**

A standard measure of acute toxicity, normally applied to ingestion and/or absorption hazards, designating the median *lethal dose* of radiation or chemical applied directly to experimental organisms that will kill 50% of the exposed population within a specific period of time and conditions.

**LD LO**

The lowest concentration and dosage of a toxic substance that kills test organisms.

**LDL**

See *lower detectable limit*. Also, *low density lipoprotein*.

**leachate**

A liquid that results from water collecting contaminants as it trickles through wastes, agricultural pesticides, or fertilizers. Leaching may occur in farming areas, feedlots, and landfills, and may result in hazardous substances entering surface water, groundwater, or soil.

**leachate collection system**

A system that gathers leachate and pumps it to the surface for treatment.

**leaching**

The process by which soluble constituents are dissolved and carried down through the soil by a percolating fluid. See also *leachate*.

**lead**

(1) A chemical element, atomic weight number 82, atomic weight 207.19, symbol Pb. (2) A heavy metal that is hazardous to health if breathed or swallowed. Its use in paints, gasoline, and plumbing compounds has been sharply restricted or eliminated by federal laws and regulations. See also *heavy metal*.

**lead angle**

An angle in which the load line is pulled during hoisting. Commonly used to refer to an angle in line with grooves in the drum or sheaves.

**lead barge**

The head, or first, barge of a tow generally with a rake.

**lead-based paint (LBP)**

A paint or other surface-coating product which has a lead content of 0.06% by weight in the total nonvolatile content of the paint, or by weight in the dried paint film. Also referred to as *lead-containing paint*.

**lead free**

According to the Federal Public Health Service Act: With respect to a drinking water cooler, that each part or component of the cooler which may come in contact with drinking water contains not more than 8 percent lead, except that no drinking water cooler which contains any solder, flux, or storage tank interior surface which may come in contact with drinking water shall be considered lead free if the solder, flux, or storage tank interior surface contains more than 0.2 percent lead. The EPA Administrator may establish more stringent requirements for treating any part or component of a drinking water cooler as lead free for purposes of this part whenever he determines that any such part may constitute an important source of lead in drinking water.

**lead intoxication**

Exhibiting of any neural, anemic, or colic symptoms resulting from lead absorption into body tissues.

**lead line**

A symptom of lead poisoning. A blue line on the gums as a result of excessive exposure to lead.

**lead poisoning**

A form of poisoning caused by the presence of lead or lead salts in the body. Lead poisoning affects the brain, nervous system, blood, and digestive system. It can be either chronic or acute. Chronic lead poisoning (plumbism) was once fairly common among painters, and was called "painter's colic." It became less frequent as paints composed of other chemicals were substituted for lead-based paints and as plastic toys replaced lead ones. Symptoms include weight loss, anemia, stomach cramp (lead colic), a bluish black line in the gums, and constipation. Other symptoms may be mental depression and, in children, irritability and convulsions. In addition to poisoning, the anemia and weight loss must also be treated, usually by providing an adequate diet. Acute lead poisoning, which is rare, can be caused in two ways. Lead may accumulate in the bones, liver, kidneys, brain, and muscles and then be released suddenly to produce an acute condition; or large amounts of lead may be inhaled or ingested at one time. Symptoms are metallic taste in the mouth, vomiting, bloody or black diarrhea, and muscle cramps. Diagnosis is made by examination of the blood and urine.

**lead wall**

The long wall of a lock, also known as a "guided wall," outside the confines of the lock chamber, usually the land wall in the case of older locks. *See also guide wall.*

**leaded gasoline**

Gasoline to which lead has been added to raise the octane level. Contains more than 0.05 grams of lead per gallon or more than 0.005 grams of phosphorus per gallon. The actual lead content of any given gallon may vary. Premium and regular grades are included, and depending on the octane rating, also leaded gasohol. Blendstock is excluded from the definition until blending has been completed. Alcohol that is to be used in the blending of gasohol is also excluded. *See also gasoline.*

**leading question**

One which instructs a witness how to answer, or "puts words into his/her mouth" to be echoed back. Leading questions are usually deemed improper on direct examination during litigation (except as may be necessary to develop the witnesses' testimony. Ordinarily, leading questions are permitted on cross-examination. However, it should be noted that, in some cases, leading questions may be permitted on direct examination (e.g., if the witness is very young, mentally disabled, or unfamiliar with the language spoken).

**leak before burst (LBB)**

A failure mode in which it can be shown that any initial flaw will grow through the wall of a pressure vessel or pressurized structure and cause leakage rather than brittle fracture/burst before leak. Normally determined at or below the maximum expected operating pressure (MEOP).

**leak test**

As pertains to ionizing radiation, a type of test for determining if a radioactive material is effectively contained or has escaped or leaked from a sealed source. It involves wiping surfaces on which the material would collect if it was released from the sealed source.

**leakage**

(1) *General.* The waste or diminution of all liquid caused by its leaking from a cask, barrel, or other vessel in which it was placed. (2) *Radiation.* Ionizing radiation, other than the useful beam, that is emitted from radiation producing equipment. Leakage from a sealed source of ionizing radiation (e.g., radioisotope) is the radioactive contamination that results outside the sealed source if the integrity of the seal fails to contain the material.

**lean body mass**

That mass of the body, including bones, muscles, and other tissues except for body fat. Also referred to as *fat-free mass*.

**lean body weight**

The lean body mass acted on by the acceleration due to gravitational or other forces according to Newton's second law. Also referred to as *fat-free weight*.

**leaning**

Pertaining to a posture in which the body longitudinal axis is away from vertical.

**learn**

Change behavior as a result of formal education, training, practice, or experience.

**learning allowance**

That time allowance given to a trainee or new worker while their skills are developed on a new job or task.

**learning control**

Having a control system with adequate memory and computing power to be able to modify its own operation in concert with newly acquired knowledge.

**learning curve**

A concept, mathematical function, or graphical representation of performance versus time in which performance improves with time as a result of learning/feedback.

**learning hierarchy**

A set of behavioral objectives, concepts, and principles arranged in the order in which they should be learned for optimum performance.

**learning hierarchy analysis**

A determination of the order in which the learning hierarchy should be taught.

**lease**

(1) A type of contract between parties (landlord and tenant) dealing with the use and occupancy of real estate or the use of property (e.g., automobile, office equipment, etc.). (2) Acquisition of a vehicle by an agency from a commercial firm, in lieu of government ownership, for a period of 60 continuous days or more.

**leased property**

Under Capital Leases: The total cost for all property obtained under leases that meet one or more of the following criteria: a) the lease transfers ownership of the property to the lessee by the end of the lease term; b) the lease contains a bargain purchase option; c) the lease term is equal to 75 percent or more of the estimated economic life of the leased property; or d) the present value at the beginning of the lease term of the minimum lease payments, excluding the portion of the payments representing executory costs such as insurance, maintenance, and taxes to be paid by

the lessor, including any profit thereon, equals or exceeds 90 percent of the excess of the fair value of the lease property to the lessor at the inception of the lease over any related investment tax credit retained by the lessor and expected to be realized by him/her.

**lessor**

A person or firm that grants a lease.

**least squares method**

A mathematical technique for fitting a straight line or curve to a set of data points where the sum of the squares of the perpendicular distances from each data point to the line or curve is minimized.

**leave of absence**

A temporary absence from employment or duty with the intention to return during which time remuneration and seniority are not normally affected.

**LED**

See *light-emitting diode*.

**ledger**

A horizontal scaffold member which extends from post to post and which supports the putlogs or bearer forming a tie between the posts. Sometimes called a *stringer*.

**leeside low**

Storm systems (extratropical cyclones) that form on the downward (lee) side of a mountain chain. In the United States, for example, leeside lows frequently form on the eastern side of the Rocky and Sierra Nevada mountain ranges.

**leeward side**

The side of an object away from the direction in which the wind is blowing.

**LEF**

See *lighting effectiveness factor*.

**left bank**

The left descending bank of a river. The side of the river marked by red buoys, white or red lights, and red reflective material. See also *right bank*.

**left-hand draft**

Current which pulls tow to the left.

**left-hand draft in this set of marks**

*Maritime*. Communication Protocol. Channel report term meaning that one should expect

the tow to drift to the left while running this course.

**left-hand reef makes well in toward channel**

*Maritime.* Communication Protocol. Term indicating that an underwater sandbar is building in toward the channel. A condition requiring extra caution on the part of the pilot and possibly the need for a flanking maneuver if the channel is considerably constricted.

**leg**

(1) *Anatomy.* The femur, tibia, fibula, and their surrounding associated and supporting soft tissues. (2) *Aviation.* Any portion of a flight plan from one point to another.

**leg clearance**

See *knee well height*.

**leg-foot**

Involving both the leg and the foot, generally referring to internally generated or motor activities. See also *foot-leg*.

**leg inseam**

The inside length of a trouser leg from the pubic crotch to approximately the dorsal/superior surface of the foot.

**leg room**

A measure of that usable volume beneath some table, platform, or other structure which the legs would normally occupy when in a seated posture.

**legal auditing**

An in-depth review of all phases of a company's operations to determine whether the company is fulfilling its obligations to laws and regulations, its permits, and any agreements with government agencies. An audit often includes an assessment of the company's management systems in order to identify ways in which the company might alter its existing structure or procedures to foster compliance.

**legal cause**

Proximate cause. Substantial factor in bringing about harm. In conflicts, denotes fact that the manner in which the actor's tortious conduct resulted in another's injury is such that the law holds the actor responsible unless there is some defense to liability.

**legal weight**

The weight of the goods plus any immediate wrappings which are sold along with the goods, e.g., the weight of a tin can as well as its contents.

**legal willfulness**

Intentional disregard of a known duty necessary to ensure the safety of persons or the property of another and the entire absence of care for life, persons, or the property of others.

**legally liable**

Liable under the law as interpreted by the courts.

**legend**

An explanatory symbol on a display or control, or on a drawing or blueprint.

**legend switch**

A labeled switch.

**Legionnaire's Disease (LD)**

Pneumonia caused by a bacterium, *Legionella pneumophila*. It has occurred among occupants of buildings in which this organism is present in the air at high concentrations. See also *building-related illness*.

**Legionella**

The bacterium that is the causative agent of Legionnaire's disease and Pontiac fever.

**legionellosis**

Diseases caused by *Legionella* bacteria.

**legislate**

To enact laws or pass resolutions via legislation, in contrast to court-made law.

**legislation**

The act of giving or enacting laws; the power to make laws; the act of legislating; preparation and enactment of laws; the making of laws via legislation, in contrast to court-made laws.

**legislative**

Making or giving laws. Pertaining to the function of law-making or the process of enactment of laws.

**legislative act**

The enactment of laws. Law passed by legislature in contrast to court-made law. One which prescribes what the law shall be in future cases arising under its provision.



### **legislative branch of government**

That branch of government which consists of this nation's law-making bodies, primarily the houses of Congress.

### **legislative immunity**

The Constitution grants two immunities to members of Congress. First, that except for treason, felony, and a breach of the peace, they are "privileged from Arrest during their Attendance" at sessions of their legislative body. Second, that "for any Speech or Debate in either House, they shall not be questioned in any other Place." The first immunity is of little practical value, for its exceptions withdraw all criminal offenses and arrests therefore from the privilege, and it does not apply to the service of any process in a civil or criminal matter. The second immunity is liberally construed and includes not only opinion, speeches, debates, or other oral matter, but also voting, making a written report, or presenting a resolution, and in general to whatever member of Congress feels necessary to transact the legislative functions and business. Even a claim of a bad motive does not destroy the immunity, for it is the public good which is thereby served.

### **legislature**

The department, assembly, or body or persons that makes statutory laws for a state or nation. At the federal level, and in most states, the legislature is bicameral in structure, usually consisting of two branches (upper house or Senate and the lower house or House of Representatives). Legislative bodies at the local levels are variously called city councils, boards of aldermen, etc.

### **LEL**

See *lower explosive limit*.

### **Lemnaceae**

Floating aquatic plants that provide a habitat for aquatic organisms capable of metabolizing wastewater organics. Also commonly referred to as *duckweed*.

### **length**

(1) The extent or distance from one end of an object to the other, or a distance in space from one clearly identified point to any other such point. In the International System of Units, the basic unit of length is the *meter*, which has been defined as the length of path traveled by

light in a vacuum during a time interval of  $1/299,792,458,458$  of a second. In the MKS System, the basic unit of length is the *meter*. In the CGS System, the basic unit of length is the *centimeter*. In the English System, the basic units of length can be either the *foot*, the *inch*, or the *yard*. (2) An open anthropometric measurement from one point on the body to another which contains as a major portion a relatively straight line, but may also contain some brief curvature, such as a round a flexed joint.

### **length-tension curve**

An inverted-U-shaped function which indicates that muscle tension capability falls off to either side of an optimum length.

### **lens**

(1) A transparent device for refracting or otherwise directing electromagnetic radiation. (2) A glass for converging or scattering rays of light. (3) The crystalline lens, a transparent organ lying behind the pupil and iris and in front of the large vitreous-filled cavity of the eye. The crystalline lens refracts (bends) light rays so that they are focused on the retina. For the eye to see objects close at hand, light rays from the objects must be bent more sharply to bring them to focus on the retina; light rays from distinct objects require much less refraction. It is the function of the lens to accommodate or make some adjustment for viewing near objects and objects at a distance. To accomplish this, the lens must be highly elastic so that its shape can be changed and made more or less convex. The more convex the lens, the greater the refraction. Small ciliary muscles create tension on the lens, making it less convex; as the tension is relaxed, the lens becomes more spherical in shape and hence more convex. With increasing age, the lenses lose their elasticity. Thus, their ability to focus light rays in the retina becomes impaired. This condition is referred to as presbyopia. In farsightedness (hyperopia), the image is focused behind the retina because the refractive power of the lens is too weak, or the eyeball axis is too short. Nearsightedness (myopia) occurs when the refractive power of the lens is too strong or the eyeball is too long, so that the image is focused in front of the retina. See also *contact lens*.

**lenticular**

(1) Pertaining to or shaped like a lens. (2) Pertaining to the crystalline lens. (3) Pertaining to the lenticular nucleus.

**lenticular cloud**

A cloud in the shape of a lens.

**LEPC**

See *Local Emergency Planning Committee*.

**leprosy**

A chronic communicable disease characterized by the production of granulomatous lesions of the skin, upper respiratory and ocular mucous membranes, peripheral nerves, and the testes; also called Hansen's disease. Not really contagious, it often results in severe disability but is rarely fatal. The cause of leprosy is believed to be a species of bacteria, *mycobacterium leprae* or *Hansen's bacillus*, which usually attacks the skin and nerves, but not the brain. Although it is not inherited, the actual means of transmission is not fully understood.

**leptokurtic**

Pertaining to a highly peaked normal distribution.

**leptospirosis**

An infection transmitted to man by dogs, swine, and rodents or by contact with contaminated water.

**lesion**

An abnormal localized change in the structure of an organ or tissue resulting from disease or injury. Lesion is a broad term, including wounds, sores, ulcers, tumors, cataracts, and any other tissue damage. Lesions range from skin sores associated with eczema to the changes in lung tissue that occur in tuberculosis.

**less than truckload (LTL)**

*Transit.* A quantity of freight less than that required for the application of a truckload rate. Usually less than 10,000 pounds and generally involves the use of terminal facilities to break and consolidate shipments.

**lessons learned**

(1) *General.* A formal, documented account or report of both the positive and negative aspects of operational or task experience which is compiled after the conclusion of the task. Used generally to highlight those actions

which should or should not be allowed to occur during any subsequent performance of like or similar tasks. (2) *Accident Investigation.* A formal, documented account or report of both the positive and negative aspects of the operation or task involved in the accident. Intended for use as a tool for the prevention of accident recurrence.

**lessor trochanter**

A rounded projection on the medial proximal femur.

**LET**

See *linear energy transfer*.

**lethal**

Sufficient to cause, or capable of causing death.

**lethal concentration (LC)**

That quantity of an agent which is sufficient to cause death. The term "concentration" generally refers to a substance inhaled.

**lethal concentration median (LC<sub>50</sub>)**

That which causes death of 50 percent of the test population within 24 hours of exposure.

**lethal dose (LD)**

That quantity of an agent which is sufficient to cause death. The term "dose" generally refers to a substance ingested.

**lethal dose median (LD<sub>50</sub>)**

That which causes death of 50 percent of the test population within 24 hours of exposure.

**letter of intent**

A written promise to carry out a specified action at some point in the future

**leucine**

A naturally occurring amino acid, one of those essential for human metabolism.

**leukemia**

A disease of unknown specific cause characterized by an overproduction of leukocytes and their precursors, and enlargement of the spleen. The disease is variable, at times running a more chronic course in adults than in children. Exposure to low intensities of ionizing radiation is thought to be one possible cause. Leukemia is classified clinically on the basis of 1) the duration and character of the disease – acute or chronic; 2) the type of cell involved – myeloid (myelogenous), lymphoid (lymphogenous), or monocytic; and 3) in-

crease or no increase in the number of abnormal cells in the blood – leukemic or aleukemic (subleukemic). In acute leukemia, the white cells resemble precursor, or immature, cells. They are larger than normal cells, and they accumulate much more rapidly than in chronic leukemia. They are incapable of performing their normal function of combating infection. In chronic leukemia, the white cells are more mature, resembling normal cells and having some limited capacity to oppose invading organisms. *See also leukocyte.*

**leukemogenic**

A substance that can cause leukemia. Also referred to as a *leukomogen*.

**leukocyte**

A white (colorless) blood corpuscle in the blood, lymph, or tissues that plays a major role in the body's defense against disease. There are five types: lymphocytes, monocytes, neutrophils, eosinophils, and basophils; the last three are often referred to as granulocytes. The leukocytes act by moving through blood vessel walls to reach a site of injury. Foreign particles such as bacteria may be engulfed or phagocytosed by the leukocytes, especially the neutrophils and monocytes. It is this process that causes the increase in the number of leukocytes in the blood during infection, and one of the laboratory determinations to diagnose infectious states is based on it. The leukocytes also play some role in the repair of injured tissue, though their function here is not clear.

**leukocytosis**

A transient increase in the number of white cells in the blood as a result of fever, infection, inflammation, etc.

**leukopenia**

A reduction, to below the normal level, of the number of white cells in the blood.

**levator**

Any muscle producing an upward movement.

**levee**

A built-up embankment on or back from the riverbank for the purpose of containing floodwater.

**level A**

The level of protection the EPA considers necessary for work in or entry into hazardous

environments or contaminated sites where the potential for serious adverse occupational health effects are present. This includes sites contaminated with unknown materials or sites or areas where materials are known to exist that could cause both respiratory and dermal exposure effects. Level A protective equipment includes supplied-air positive pressure respirator and does not require skin protection.

**level B**

The level of protection described by the EPA that includes the maximum degree of respiratory protection but a lesser degree of full body and skin protection. Examples include airborne respirable contaminants that are very toxic but not toxic through skin absorption.

**level C**

The protection level described and required by the EPA where known concentrations of airborne contaminants exist but are suitably protected against by air-purifying respirators and do not require skin protection.

**level D**

The protection level required and described by the EPA where nuisance respiratory exposures and non-absorbing skin contaminants exist. Respirators would be required only when air sampling and monitoring determine that hazards exist above the nuisance level.

**level of concern (LOC)**

The concentration in air of an extremely hazardous substance above which there may be serious immediate health effects to anyone exposed to it for short periods of time.

**level of effort**

(1) A type of contract or agreement in which a certain number of people are supported to perform specified tasks. (2) The amount of physical or mental activity exerted or required to perform at a certain level.

**level of service**

*Transportation.* (1) A set of characteristics that indicate the quality and quantity of transportation service provided, including characteristics that are quantifiable and those that are difficult to quantify. (2) For highway systems, a qualitative rating of the effectiveness of a highway or highway facility in serving traffic, in terms of operating conditions. (3)

For paratransit, a variety of measures meant to denote the quality of service provided, generally in terms of total travel time or a specific component of total travel time. (4) For pedestrians, sets of area occupancy classifications to connect the design of pedestrian facilities with levels of service.

**leveled time**

See *normal time*.

**leveling**

A performance rating method in which an observer adjusts a worker's time to compare with normal time. See also *performance rating*.

**lever**

A rigid linear structure which is capable of movement and exerting force about a fulcrum.

**lever arm**

(1) The distance from a joint axis to the point of a muscle attachment. (2) The distance from the fulcrum to the point of effort or resistance on a lever.

**lever switch**

A type of toggle switch in which the activating mechanism is a manually operated lever.

**leverage**

That mechanical advantage achieved by using a lever.

**Leverett technique**

See *L-1 maneuver*.

**lexical decision task**

The process in which a judgement is made as to whether or not a letter string is a word.

**LFL**

See *lower flammable limit*.

**LIA**

Laser Institute of America.

**liability**

Being bound or obligated by law to do, pay, or make good something.

**liability insurance**

Insurance that covers suits against the insured for such damages as injury or death to other drivers or passengers, property damage, and the like. It is insurance for those damages for which the driver can be held liable. Liability insurance is that form of insurance which indemnifies against liabilities on account of in-

juries to the person or property of another. It is distinguished from *indemnity insurance* and may be issued to cover the liability of, for example, carriers, contractors, employers, landlords, manufacturers, and drivers. See also *insurance and indemnity insurance*.

**liable**

Bound or obligated in law or equity. Responsible, chargeable, answerable, and/or compelled to make satisfaction, compensation, or restitution. The condition of being bound to respond because a wrong has occurred.

**liable parties**

Under the Comprehensive Emergency Response, Compensation, and Liabilities Act (CERCLA), any person who by contract, agreement, or otherwise, arranged for disposal or treatment of hazardous substances owned or processed by such person.

**libel**

A method of defamation expressed by print, writing, pictures, or signs. In its most general sense, any publication that is injurious to the reputation of another. A false and unprivileged (i.e., without legal precedence) publication in writing of defamatory material.

**license**

(1) *General*. An authorization granted by a government agency to conduct an activity under the conditions specified in the license. (2) *Radiation*. The company or person authorized to use a radioactive material obtained under a license issued by the NRC or an Agreement State.

**license plate lamp**

A lamp used to illuminate the license plate on the rear of a motor vehicle.

**licensed driver**

Any person who holds a valid driver's license from any state.

**licensed material**

*Radiation*. Source material, special nuclear material or byproduct material that is received, possessed, used, or transferred under a special license issued by the licensing agency (e.g., NRC, Energy Research and Development Administration, or an Agreement State).

**lichen**

(1) A name applied to many different kinds of popular skin diseases. (2) Any species or

plant of a group believed to be composed of symbiotic algae and fungi.

**lidar**

An instrument that uses a laser to generate intense pulses that are reflected from atmospheric particles of dust and smoke. Lidars have been used to determine the amount of particles in the atmosphere as well as particle movement that has been converted into wind speed. Lidar means *light* detection and ranging.

**lie sheet**

*Transit (slang)*. A driver's log book.

**lien**

A legal restriction imposed on a piece of equipment or real estate, usually by permission of a court, to secure the payment of money under a contract or if damages are awarded in litigation.

**life cycle**

(1) *System Safety*. A phased concept to explain the various stages of product or system progression consisting of the concept phase, design phase, production phase, operational phase, and disposal phase. In system safety, the product or system life cycle is often used to indicate the timing of certain types of analytical evaluations. (2) *Environmental*. Consecutive and interlinked stages of a product or service system, from the production and delivery of raw material or the generation of natural resources to the final disposal.

**life cycle characteristic curve**

A graph curve used to describe the expected phases over the lifetime of a machine or electromechanical system or process. It consists of a steeply declining initial segment (run-in, or infant mortality phase), a relatively flat middle segment (the useful phase), and a moderately increasing terminal segment (the wear-out or disposal phase). Synonymous with *bathtub curve*.

**life cycle cost**

The total cost of an item over its useful life, including purchase, maintenance, and operations.

**life expectancy**

The number of years a person may be expected to live from a given age, based on the

mean length of life of persons of a similar age.

**life jacket**

A personal flotation device worn about the torso and normally secured with straps across the torso and through the pelvic crotch. U.S. Coast Guard requires a life jacket for each occupant of a floating craft. Normally, children should be wearing theirs at all times while in a floating craft (in actual practice, however, this is rarely seen).



*Life jackets are required for all occupants of a floating craft*

**life performance curve**

A functional relationship between some particular characteristic of a lamp and its age.

**life support**

That function which addresses the sustenance, health promotion, and protection of personnel under all reasonably expected conditions for a specified activity.

**life support system**

Any system which provides life support.

**lifeline**

A rope or other type of cable intended to save an individual's life should an accident occur under hazardous working conditions. May



function to break fall before striking an object, to keep from drifting off, to keep from being washed overboard, etc.

**lift**

In a sanitary landfill, a compacted layer of solid waste and the top layer of cover material.

**lift vessel**

A vessel designed to be loaded or unloaded by moving the containers with a heavy crane.

**lifting condensation level (LCL)**

The level or altitude at which a parcel of air, when lifted dry adiabatically, would become saturated.

**lifting station**

See *pumping station*.

**lifting task**

Any task which involves manually changing the location of an object without external mechanical assistance and applies a force and/or torque to the vertebral column.

**lifting technique**

A procedure recommended or used by an individual to perform a particular lifting task.

**lifting torque**

The product of the load and distance of the load from a fulcrum in the vertebral column which is created by a lifting task.

**ligament**

A band of dense fibrous connective tissue which interconnects the articular aspects of bones.

**ligature**

A thread or wire used in surgery to tie off blood vessels to prevent bleeding, or to treat abnormalities in other parts of the body by constricting the tissues.

**light**

(1) Radiation from a region of the electromagnetic spectrum of which an organism becomes aware through stimulation of the retina or other visual receptor; that stimulation which excites visual receptors. (2) Not heavy.

**light activity**

That level of physical activity which requires/consumes 60 – 100 calories per square meter of skin surface per hour, including the basal metabolic rate.

**light adaptation**

An adjustment within the visual system making it more or less sensitive to light by adjusting the threshold.

**light boat**

A towboat without a tow.

**light density railroad**

Railroads with 1200 or less train-miles per road mile.

**light duty**

A work classification in which an individual is not permitted to do heavy lifting for health or other reasons.

**light duty scaffold**

A scaffold designed and constructed to carry a working load not to exceed 25 pounds per square foot.

**light duty vehicle**

Automobiles and light trucks combined.

**light effort**

The level of physical work which can be maintained for a work shift without undue fatigue.

**light-emitting diode (LED)**

Any semiconductor diode which emits light when current is applied.

**light-emitting diode display**

Any display using light-emitting diodes as a radiant source.

**light field microscopy**

Microscopic technique that relies on the amplitude modulation of light to make specimens visible. Different portions of the specimen absorb light to a differing degree, thereby providing specimen details as differences in the intensity of light reaching the eye.

**light gun**

*Aviation.* A handheld directional light signaling device which emits a brilliant narrow beam of white, green, or red light as selected by the tower controller. The color and type of light transmitted can be used to approve or disapprove anticipated pilot actions where radio communication is not available. The light gun is used for controlling traffic operating in the vicinity of the airport and on the airport movement area.



**light loss factor (LLF)**

Any of a set of possible variables which may contribute to a decrease in available luminance for a given location.

**light mixing**

See *additive color mixing*.

**light pen**

A pen-shaped interactive device which emits a light beam for striking a certain region of a display to initiate a certain system action.

**light quantity**

A measure of the amount of light used, equal to the product of the luminous flux and the time duration for which it is sustained.

**light rail**

(1) *DOT*. A streetcar type vehicle operated on city streets, semi-exclusive rights-of-way, or exclusive rights-of-way. Service may be provided by step entry vehicles or by level boarding. (2) *APTA*. An electric railway with a "light volume" traffic capacity compared to "heavy rail." Light rail may use shared or exclusive rights-of-way, high or low platform loading, and multi-car trains or single cars. (3) *FTA*. Lightweight passenger rail cars operating singly (or in short, usually two-car, trains) on fixed rails in a right-of-way that is not separated from other traffic for much of the way. Light rail vehicles are driven electrically with power being drawn from an overhead electric line via a trolley or a pantograph. Also known as *streetcar*, *trolley car*, and *tramway*.

**light rail (streetcar)**

Urban transit which uses predominantly reserved but not always grade-separated rights-of-way. Electrically powered rail vehicles operate alone or in trains.



*Street cars are used extensively throughout Europe as well as in many cities in the United States*

**light rail vehicles (streetcars)**

Rail cars with motive capability, usually driven by electric power taken from overhead lines, configured for passenger traffic and usually operating on non-exclusive right-of-way.

**light scatter fraction**

The ratio of scattered light to specularly reflected light.

**light stand**

*Maritime Navigation*. Colloquial term meaning the position or location of a shore-lighted aid to navigation.

**light truck**

(1) An automobile other than a passenger automobile which is either designed for off-highway operation or designed to perform at least one of the following functions: a) transport more than 10 persons; b) provide temporary living quarters; c) transport property on an open bed; d) provide greater cargo-carrying than passenger-carrying volume; or e) permit expanded use of the automobile for cargo-carrying purposes or other nonpassenger-carrying purposes through the removal of seats by means installed for that purpose by the automobile's manufacturer or with simple tools, such as a screwdriver and wrenches, so as to create a flat, floor level, surface extending from the forward most point of installation of those seats to the rear of the automobile's interior. An automobile capable of off-highway operation is an automobile a) that has 4-wheel drive, or is rated at more than 6,000 pounds gross vehicle weight; and b) that has at least four of the following characteristics calculated when the automobile is at curb weight, on a level surface, with the front wheels parallel to the automobile's longitudinal centerline, and the tires inflated to the manufacturer's recommended pressure: (i) approach angle of not less than 28 degrees; (ii) break over angle of not less than 14 degrees; (iii) departure angle of not less than 20 degrees; (iv) running clearance of not less than 20 centimeters; (v) front and rear axle clearances of not less than 18 centimeters each. (2) Trucks of 10,000 pounds gross vehicle weight rating or less, including pickups, vans, truck-based station wagons, and utility vehicles. (3) Two-axle, four-tire trucks.

**lighted airport**

An airport where runway and obstruction lighting are available.

**lighter**

A barge used in off-loading an oceangoing vessel.

**lighter-aboard-ship (LASH)**

A type of barge-carrying vessel equipped with an overhead crane capable of lifting barges of a common size and stowing them into cellular slots in a thwart ship position. Lighter-aboard ship is an all-water technology analogous to containerization.

**lighter-than-air aircraft**

Aircraft that can rise and remain suspended by using contained gas weighing less than the air that is displaced by the gas.



*The zeppelin is the best example of a lighter-than-air aircraft.  
The modern-day blimp is in this category of aircraft.*

**lighting**

The collective sensation or description of the light being input to the visual environment.

**lighting effectiveness factor (LEF)**

The ratio of equivalent sphere illumination to calculated illumination or illumination measured with a meter.

**lighting fixture**

Any structure designed and built specifically for the installation of light-producing devices and to direct illumination.

**lighting outlet**

An outlet intended for the direct connection of a lamp holder, a lighting fixture, or a pendant cord terminating in a lamp holder.

**lightness**

(1) A judgement as to the weight of an object, on a scale from light to heavy. (2) That apparent degree to which something is judged as lighter or darker compared to a similarly reflecting or transmitting white or achromatic reference.

**lightning**

A visible electrical discharge produced by thunderstorms. It may take place within a cloud, from one cloud to another, from a cloud to the surrounding air, or from a cloud to the ground. For lightning to occur, separate regions containing opposite electrical charges must exist within a cumulonimbus cloud. Exactly how this charge separation comes about is not totally understood. However, it is believed that, because unlike charges attract one another, the negative charge at the bottom of the cloud causes a region of the ground beneath it to become positively charged. As the thunderstorm moves along, this region of positive charge follows the cloud like a shadow. The positive charge is most dense on protruding objects, such as trees, poles, and buildings. The difference in charges causes an electrical potential between the cloud and ground, which may be 10,000 volts per meter. In dry air, however, a flow of current does not occur because the air is a good electrical insulator. Gradually, the electrical potential builds and when the electrical field associated with it exceeds about 3 million volts per meter, the insulating properties of the air break down, a current flows, and lightning occurs. *Cloud-to-ground lightning* begins as a flow of electrons from the middle of the cloud rushes toward the base. This discharge of electrons proceeds toward the ground in a series of steps. Each discharge covers approximately 50 meters, then stops for about 50 millionths of a second, then occurs again over another 50 meters. This *stepped leader* is very faint and is usually invisible to the human eye. As the top of the stepped leader approaches the ground, a current of positive charge starts upward from the ground to meet it. After they meet, large numbers of electrons flow to the ground and a much larger, brighter *return stroke* surges upward to the cloud along the path followed by the stepped leader. Even though the bright return stroke travels from the ground upward to the cloud, it happens so

quickly (in 1/10,000 of a second) that the human eye cannot resolve the motion and we see what appears to be a continuous bright flash of light. Sometimes there is only one lightning stroke, but more often each flash is actually a series of very rapid strokes that travel between the cloud and ground. A lightning flash consisting of many strokes usually lasts less than a second. During this short period of time the human eye may not be able to perceive the individual strokes and the flash appears to flicker. The lightning stroke can heat the air through which it travels to an incredible 30,000°C (54,000°F), which is approximately five times the temperature of the sun's surface. This extreme heating causes the air to expand explosively, thus initiating a booming sound wave called *thunder* that travels outward in all directions from the flash. Because light travels so fast, it reaches the eye nearly instantly. But the sound, traveling at only 330 meters/second (1100 feet/second), takes much longer to reach the ear. Hence, by counting the seconds from the moment the lightning is seen until the thunder is heard, one can approximate their distance from the lightning stroke. Because it takes sound about 3 seconds to travel one kilometer (5 seconds for each mile), thunder that is heard 15 seconds after the lightning was seen is approximately 5 km (3 miles) away.



*Lightning burst, a violent display of nature's power*

### **Likert scale**

A technique for rating surveys on a discrete, integer-based scale having an odd number of discrete options and consisting of a range, generally from 1 to 5, from strongly disagree to strongly agree, respectively. (May occasionally see scales to 7 or 9 options).

### **limb**

(1) An arm or leg, including all its component parts. (2) A structure or part resembling an arm or leg.

### **limb coordination**

A measure of the degree of integrated functioning of the limbs in performing some activity.

### **limb-load aggregate**

The combined mass/torque from the working load plus the mass/torque from the limb(s) involved in a lifting or movement task.

### **limb movement velocity**

The rate at which a single movement of a limb can be accomplished, without regard for accuracy or coordination.

### **limestone scrubbing**

Process in which sulfur gases moving toward a smokestack are passed through a limestone and water solution to remove sulfur before it reaches the atmosphere.

### **liminal contrast**

*See contrast threshold.*

### **liminal contrast threshold**

*See contrast threshold.*

### **limit load**

The maximum load, or combination of loads, a part or structure is expected to experience at any time during its intended operation and expected environment, as follows:

$$\text{limit load} = (\text{load factor}) \times (\text{rated load})$$

### **limit of detection (LOD)**

The smallest amount of an analyte that can be distinguished from background or the lowest concentration that can be determined to be statistically different from a blank. Typically, it is that amount of analyte which is three standard deviations above the background response. *See also lower detectable limit and detection limit.*

### **limit of quantitation (LOQ)**

The amount of analyte above which quantitative results may be reported with a specific degree of confidence. Typically, this value is 10 times the standard deviation of concentrations very near the limit of detection. *See also limit of detection.*

**limit stop**

Any device or mechanism which prevents further movement of a control, door, drawer, or other object at a certain point when motion beyond that point might have undesirable consequences. May be accomplished by audible click or tactile sensation.

**limit switch**

An electrical switch which is capable of cutting the power supply if the device being monitored goes beyond a specified range.

**limitation of damages**

Provision in a contract or agreement by which parties agree in advance as to the amount or limit of damages for breach.

**limited radar airport traffic control tower**

Airport traffic control tower at which air traffic control specialists are permitted to provide radar approach control service that requires only limited vectoring, as well as to handle takeoffs and landings.

**limiting factor**

A condition, whose absence or excessive concentration, is incompatible with the needs or tolerance of a species or population and which may have a negative influence on their ability to grow or even survive.

**limnology**

The study of the physical, chemical, meteorological, and biological aspects of fresh water.

**limousine or auto rental with driver**

Establishments primarily engaged in furnishing limousines or auto rentals with drivers, where such operations are principally within a single municipality, contiguous municipalities, or a municipality and its suburban areas e.g., automobile rental with driver, limousine rental with driver, hearse rental with driver, passenger automobile rental with driver.

**limp**

(1) A type of gait in which steps are halting and the time spent on one leg is shorter than the other. *See also gait.* (2) Flaccid; having less than normal tonicity.

**line**

*Rail Operations.* One or more running tracks, each kilometer of line counting as one, however many tracks there may be. The total length of line operated is the length operated

for passenger or goods transport, or both. Where a section of network comprises two or more lines running alongside one another, there are as many lines as routes to which tracks are allotted exclusively.

**line and staff organization**

In the structure of an organization, those members who are directly accountable and responsible for the daily operations of the enterprise are considered *line* management with the authority to implement or change company policy and operating procedures. Those who serve as advisors to the line and can only recommend changes are considered *staff* management.

**line breaking**

The intentional opening of a pipe, line, or duct that is or has been carrying flammable, corrosive, or toxic material, an inert gas, or any fluid at a volume, pressure, or temperature capable of causing injury.

**line-clearance tree trimming**

The pruning, removing, trimming, maintaining, repairing, or clearing of trees or cutting of brush that is within 10 feet (305 cm) of electric supply line or equipment.

**line-haul**

*Rail Operations.* Transportation from one city to another as differentiated from local switching service. *See also linehaul.*

**line-haul operation railroads**

Establishments primarily engaged in line-haul railroad passenger and freight operations.

**line miles**

The sum of the actual physical length (measured in only one direction) of all streets, highways, or rights-of-way traversed by a transportation system (including exclusive rights-of-way and specially controlled facilities) regardless of the number of routes or vehicles that pass over any of the sections.

**line of flow**

*See flow path.*

**line of sight (LOS)**

That path from the lateral and vertical center of the eye pupil to an object being fixated or direction being viewed.

**line section**

A continuous run of pipe that is contained between adjacent pressure pump stations,



between a pressure pump station and a terminal or breakout tank, between a pressure pump station and a block valve, or between adjacent block valves.

**line spar**

*Maritime.* Line used to secure spar to deck.

**line spectrum**

A frequency spectrum in which the components are shown as lines at discrete frequencies.

**line through**

*Maritime.* To pull a boat through a swift shallow channel by means of lines placed on the bank. A term seldom used today.

**line width**

The width of a line on a display or hardcopy.

**line worker**

A worker employed by a utility company (e.g., electrical, telephone, etc.) who performs the majority of his/her assigned duties out "on the line," that is, working on the electrical lines or telephone lines, to ensure uninterrupted service and/or to make improvements to existing service.



*Line workers are exposed to a number of hazards on a daily basis such as working at heights and around high voltage*

**linear**

(1) Pertaining to a linear function. (2) Measured in a straight line.

**linear algebra**

The study and/or use of simultaneous linear equations, as used in vectors and linear transformations.

**linear correlation**

A relationship between two variables which may be represented graphically by a straight line or by a linear function.

**linear energy transfer (LET)**

The linear rate of energy loss locally absorbed by an ionizing radiation particle passing through a material medium.

**linear equation**

See *linear function*.

**linear function**

A mathematical function which may be represented by a straight line, having an equation of the form below.

$$y = mx + b$$

**linear momentum**

The tendency for an object to continue moving in a straight line.

**linear movement control**

A control device which moves in a straight line when force is applied.

**linear programming**

A technique for determining a solution to a problem using the assumptions a) that the function is linear and b) that the process involved can be represented as a set of linear equations or inequalities.

**linear range**

*Instruments.* The ratio of the largest concentration to the smallest concentration within which the detector response is linear. It is also expressed as the range (i.e., lower value to upper value) over which the detector response is linear.

**linear referencing system (LRS)**

The total set of procedures for determining and retaining a record of specific points along a highway. Typical systems used are mile point, milepost, reference point, and link-node.

**linear service**

International water carriers that ply fixed routes on published schedules.

**linear system**

A system in which output varies according to some proportionality constant and the input.

**linearity**

(1) The straightness of a line, or column, or row on a display. (2) That property between two variables in which a change in one variable results in a directly proportional change in the other.

**linehaul**

*Rail Operations.* The movement of trains between terminals and stations on the main or branch lines of the road, exclusive of switching movements. *See also* [line-haul](#).

**liner**

(1) A relatively impermeable barrier designed to prevent leachate from leaking out of a landfill. Liner materials include plastic and dense clay. (2) An insert or sleeve for sewer pipes to prevent leakage or infiltration. (3) A word derived from the term "line traffic," which denotes operation along definite routes on the basis of definite, fixed schedules; a "line" thus is a vessel that engages in this kind of transportation, which generally involves the haulage of general cargo as distinct from bulk cargo. (4) A vessel sailing between specified ports on a regular basis.

**liner terms**

An expression covering assessment of ocean freight rates generally implying that loading and discharging expenses will be for the ship owner's account, and usually apply from the end of ship's tackle in port of loading to the end of ship's tackle in port of discharge.

**lines**

*Maritime.* The various types used with regard to towing: back line, backing line, breast line, check line, dropping out line, face line, fore and aft lines, handy line, head line, jockey line, lashing, lead line, lock line, monkey line, quarter line, side line, spar line, stem line, tow line, spring line, peg line.

**linguadental**

Articulated with the tip of the tongue placed on the upper front teeth.

**liniment**

An oily, soapy, or alcoholic preparation to be rubbed on the skin.

**lining**

A material permanently attached to the inside of the outer shell of a garment for the purposes of thermal protection and padding.

**link**

(1) Any interface between the human operator and a machine, at which movement in one produces movement in the other. May be referred to as *fixed linkage mechanism*. (2) A straight line representing a body segment,

terminating at pivot points on the body. (3) Any interface, interaction, or bond between individuals. Also referred to as *linkage*.

**link analysis**

(1) An examination and study of the biomechanical link actions or positions of the body. (2) An identification and examination of the sensorimotor and mechanical and/or electrical interfaces between individuals, machines, or human and machine in a system.

**linkage**

(1) *Chemistry.* The connection between different atoms in a chemical compound, or the symbol representing it in structural formulae. (2) *Genetics.* The tendency for a group of genes in a chromosome to remain in continuous association from generation to generation. (3) *Psychology.* The connection between a stimulus and its response. (4) *See* [link \(3\)](#).

**linked passenger trip**

A trip from origin to destination on the transit system. Even if a passenger must make several transfers during a journey, the trip is counted as one linked trip on the system.

**lip breadth**

The maximum horizontal linear distance between the most lateral point of the junction of the upper and lower lips on each side of the mouth opening. Measured with the facial muscles relaxed.

**lip breadth, smiling**

The maximum horizontal linear distance between the corners of the mouth opening. Measured with the individual smiling broadly.

**lip – lip length**

The vertical distance, in the midsagittal plane, from the lower margin of the lower lip to the upper margin of the upper lip. Measured with the facial muscle relaxed and the lips together.

**lip protrusion**

The most anterior point of either the upper or lower lip, whichever is more anterior. Must specify which lip, if different.

**lip protrusion to wall**

The horizontal linear distance from a wall to the most anterior point of the lips. Measured with the individual standing or sitting erect with the back of the head against the wall.



**lip-reading**

Perception of speech through the sense of sight, by recognition of the words formed from movement of the lips.

**lipid solubility**

The maximum concentration of a chemical that will dissolve in fatty substances; lipid soluble substances are insoluble in water. If a substance is lipid soluble it will very selectively disperse through the environment via living tissue.

**lipids**

A comprehensive term for fats and fat-derived materials that denotes substances extracted from animal or vegetable cells by non-polar or fat-soluble solvents. Lipids are among the chief structural components of living cells.

**lipochrome**

Any one of a group of fat-soluble hydrocarbon pigments, such as lutein, chromophane, and the natural yellow coloring material of butter, egg yolk, and yellow corn. They are also known as carotenoids.

**lipoprotein**

A combination of lipid and protein, having the general properties (e.g., solubility) of proteins. Practically all of the lipids of the plasma and lipoprotein complexes (alpha- and beta-lipoproteins) can be distinguished by electrophoresis. Elevated levels of *low density lipoprotein (LDL)* are generally considered harmful and may be a major contributory factor in arterial sclerosis and other heart-related diseases. Whereas, elevated levels of *high density lipoprotein (HDL)* are generally considered beneficial in the overall prevention of heart disease and related ailments.

**liposome**

One of the particles of lipid matter held emulsified in the tissues in the form of invisible fat.

**lipotropism**

Affinity for fat or fatty tissue, especially that of certain agents that are capable of decreasing the deposits of fat in the liver. Also called *lipotropy*.

**liquefaction**

Changing a solid into a liquid.

**liquefied compressed gas (LCG)**

A compressed gas which is partially liquid at the cylinder pressure and a temperature of 70°F (21°C).

**liquefied natural gas (LNG)**

(1) Natural gas or synthetic gas having methane as its major constituent and which has been changed to a liquid or semisolid. (2) Natural gas (primarily methane) that has been liquefied by reducing its temperature to -260°F at atmospheric pressure.

**liquefied natural gas (LNG) facility**

A pipeline facility that is used for liquefying or solidifying natural gas or synthetic gas or transferring, storing, or vaporizing liquefied natural gas.

**liquefied petroleum gas (LPG)**

Ethane, ethylene, propane, propylene, normal butane, butylene, and isobutane produced at refineries or natural gas processing plants, including plants that fractionate new natural gas plant liquids.

**liquid**

A material that has a vertical flow of over 2 inches (50 mm) within a three minute period, or a material having one gram or more liquid separation, when determined in accordance with the procedures specified in American Society for Testing and Materials (ASTM) specification D4359-84, "Standard Test Method for Determining whether a Material is a Liquid or Solid," 1984 edition.

**liquid phase**

*DOT.* A material that meets the definition of liquid when evaluated at the higher of the temperature at which it is offered for transportation or at which it is transported, not at the 37.8°C (100°F) temperature specified in American Society for Testing and Materials (ASTM) specification D4359-84.

**liquid spiking**

Introducing a solvent-containing analyte of interest directly onto a sorbent media. Subsequent desorption and analysis of the liquid spike should have a recovery of greater than or equal to 75%.

**liquidated damages and penalties**

The term is applicable when the amount of the damages has been ascertained by the judgment in the action, or when a specific sum of

money has been expressly stipulated by the parties to a bond or other contract as the amount of damages to be recovered by either party for a breach of the agreement by the other. The purpose of a penalty is to secure performance, while the purpose of stipulating damages is to fix the amount to be paid in lieu of performance. Liquidated damages is the sum which a party to a contract agrees to pay if he/she breaks some promise and, which having been arrived at by a good faith effort to estimate actual damage that will probably ensue from a breach, is recoverable as agreed damages if a breach does in fact occur.

#### **LIRS**

See *low impact resistant supports*.

#### **list**

Shorthand term for the EPA list of violating facilities, or lists of firms debarred from obtaining government contracts because they violated certain sections of the Clean Air Act or Clean Water Act. The list is maintained by the Office of Enforcement and Compliance Monitoring.

#### **listed**

With regard to equipment, it is considered "listed" if it is of a kind mentioned in a list which a) is published by a nationally recognized laboratory which makes periodic inspections of the production of such equipment, and b) states such equipment meets nationally recognized standards or has been tested and found safe for use in a specified manner.

#### **listed waste**

Wastes listed as hazardous under RCRA but which have not been subjected to the Toxic Characteristics Listing Process because the dangers they present are considered self-evident.

#### **lite locomotive**

A locomotive or a consist of locomotives not attached to any piece of equipment or attached only to a caboose.

#### **liter**

In the metric system, a unit of measurements equivalent to 1.0567 quarts.

#### **lithium**

A chemical element, atomic number 3, atomic weight 6.939, symbol Li.

#### **lithosphere**

The solid part of the Earth below the surface, including any groundwater contained within it.

#### **litigant**

A party to a lawsuit (i.e., plaintiff or defendant); one engaged in litigation; usually spoken of active parties, not of nominal ones.

#### **litigate**

To dispute or contend in form of law; to settle a dispute or seek relief in a court of law; to carry on a lawsuit.

#### **litigation**

A lawsuit. Legal action, including all proceedings therein.

#### **litigious**

That which is the subject of a lawsuit or action; that which is contested in a court of law.

#### **litmus**

A blue stain prepared by enzymatic fermentation of coarsely powdered lichens.

#### **litmus paper**

Absorbent paper impregnated with a solution of litmus, dried and cut into strips. It is used to indicate the acidity or alkalinity of solutions. If dipped into alkaline solution, it remains blue; acid solution turns it red.

#### **Little Ice Age**

The period from about 1550 to 1850 when average global temperatures were about 1.5°C cooler, and alpine glaciers increased in size and advanced down mountain canyons.

#### **little league elbow**

An overuse injury caused by stress on the muscles, tendons, epiphyses, and articular surface of the elbow joint.

#### **little league shoulder**

A condition of tendonitis or metaphysical fracture causing pain from excessive internal and rotational stresses around the shoulder.

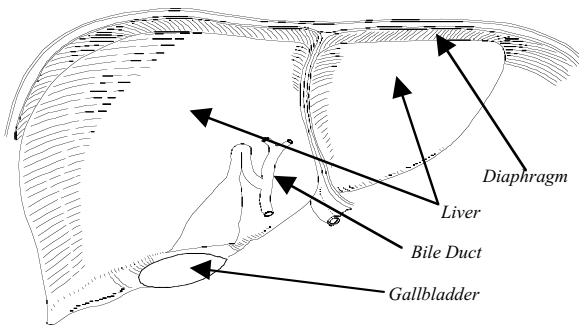
#### **live room**

A room characterized by a small amount of sound absorption. See also *reverberation*.

#### **liver**

A large gland of red color located in the upper right portion of the abdomen. It has many functions concerned with the process of digestion and with the development of the erythrocytes. It produces bile, helps detoxify harmful substances in the blood, and stores food. It is the largest internal organ. The

liver can store up to 20 percent of its weight in glycogen and up to 40 percent of its weight in fats. The basic fuel of the body is a simple form of sugar called glucose. This comes to the liver as one of the products of digestion, and is converted into glycogen for storage. It is reconverted to glucose, when necessary, to keep up a steady level of sugar in the blood. This is normally a slow, continuous process, but in emergency conditions, the liver, responding to epinephrine in the blood, releases large quantities of this fuel into the blood for use by the muscles. As the chief supplier of glucose in the body, the liver is sometimes called upon to convert other substances into sugar. The liver cells can make glucose out of protein and fat. This may also work in reverse: the liver cells can convert excess sugar into fat and send it for storage to other parts of the body. In addition to these functions, the liver builds many essential proteins and stores up certain necessary vitamins until they are needed by other organs in the body. The liver disposes of worn-out blood cells by breaking them down into their different elements, storing some, and sending others to the kidneys for disposal in the urine. It filters and destroys bacteria and also neutralizes poisons. The liver also helps to maintain the balance of sex hormones in the body. A certain amount of female hormone is normally produced in males, and male hormone in females. When the level of this opposite sex hormone rises above a certain point, the liver takes up the excess and disposes of it. Finally, the liver polices the proteins that have been passed through the digestive system. Some of the amino acids derived from protein metabolism cannot be used by the body: the liver rejects and neutralizes these acids and sends them to the kidneys for disposal.



The liver, gallbladder, bile duct (which leads to the small intestine), and their relative position under the diaphragm

### **lives lost**

*U.S. Coast Guard.* Those persons who perished as a direct result of the distress incident to which the Coast Guard was responding. *Lives lost before* refers to those persons who were considered lost prior to Coast Guard notification. *Lives lost after* refers to those persons who were alive at the time of Coast Guard notification, but who subsequently died.

### **lives saved**

*U.S. Coast Guard.* Those persons who would have been lost without Coast Guard assistance.

### **livestock body**

Truck or trailer designed for the transportation of farm animals.

### **LLF**

See *light loss factor*.

### **LLNL**

Lawrence Livermore National Laboratory.

### **ln**

Natural logarithm.

### **LNG**

See *liquefied natural gas*.

### **load**

The performance demands required from a system or individual at any given time.

### **load cell**

A strain gauge-based device for measuring the amount of force applied to an object.

### **load-endurance curve**

A graphical curve illustrating the relationship between the percentage of maximum load and the length of time which that load will be voluntarily held.

### **load factor**

(1) *General.* A factor that accounts for unavoidable deviations of the actual load from the nominal value. Examples of load factors include wind, shock, seismic, and dynamic load factors. (2) *Aviation.* The ratio of a specified load to the total weight of the aircraft. The specified load is expressed in terms of any of the following: aerodynamic forces, inertia forces, or ground or water reactions. (3) *Transportation.* The percentage of seating or freight capacity which is utilized. Also, a term relating the potential capacity of a sys-

tem relative to its actual performance. It is often calculated as total passenger miles divided by total vehicle miles. (4) *Performance*. That proportion of the work cycle time required for a worker to perform the necessary work at standard performance during a machine-paced cycle.

**load limit**

The maximum weight or stress which an individual, floor, vehicle, or other structure can safely support. Also referred to as *allowable load*.

**load ratio**

*Transportation (Trucking)*. The ratio of loaded miles to empty miles per tractor.

**load stress**

That type of sensory overload caused by having too many channels of information to process effectively.

**load weight**

The maximum weight which a vehicle can safely carry.

**loaded car mile**

*Transportation*. A loaded car mile is a mile run by a freight car with a load. In the case of intermodal movements, the car miles generated will be loaded or empty depending on whether the trailers/containers are moved with or without a waybill, respectively.

**loading island**

*Transit*. (1) A pedestrian refuge within the right-of-way and traffic lanes of a highway or street. It is provided at designated transit stops for the protection of passengers from traffic while they wait for and board or alight from transit vehicles. (2) A protected spot for the loading and unloading of passengers.

**loading secondary task**

A secondary task which must be constantly attended to.

**loading spectrum**

A representation of the cumulative loading anticipated for the structure under all expected operating environments; significant transportation and handling loads are included.

**loading tramway**

*Maritime*. A pair of rails running down the riverbank upon which a cart rides for the pur-

pose of loading buoys and other equipment aboard a tender.

**LOAEL**

See *lowest observable adverse effect level*.

**loaned employee**

Loaned servant is an employee who is loaned or hired out to another employer for some specific service or particular transaction and who is under exclusive control of that employer who may then be held vicariously liable for acts of the employee under ordinary principles of respondeat superior.

**loaned servant doctrine**

When one employer lends an employee to another for a particular employment, the employee, for anything done in that employment, must be dealt with as an employee of the one to whom he/she has been lent.

**lobe**

A more or less well-defined portion of an organ or gland.

**lobectomy**

Excision of a lobe, as of the lung, brain, or liver.

**lobotomy**

The cutting of nerve fibers connecting a lobe of the brain with the thalamus. In most cases the effected parts are the prefrontal or frontal lobes, the areas of the brain involved with emotion; thus, the operation is referred to as prefrontal or frontal lobotomy. A lobotomy is a form of psychosurgery, a field in which the purpose of an operation is not to remove a growth or repair an injury to the body but to change the patient's mental and emotional state. In modern medical practice, physicians usually regard lobotomy as a last resort. The operation is rarely performed anymore (except in extremely violent cases when all other treatments and modalities fail. Certain drugs have been developed to treat mental illnesses which have all but eliminated the potential for lobotomy in most cases.

**local aircraft operations**

Performed by aircraft that a) operate in the local traffic pattern or within sight of the airport; b) are known to be departing for, or arriving from flight in local practice areas located within a 20-mile radius of the airport;

c) execute simulated instrument approaches or low passes at the airport.

**local airport advisory (LAA)**

A service provided by flight service stations or the military at airports not serviced by an operating control tower. This service consists of providing information to arriving and departing aircraft concerning wind direction and speed, favored runway, altimeter setting, pertinent known traffic, pertinent known field conditions, airport taxi routes and traffic patterns, and authorized instrument approach procedures. This information is advisory in nature and does not constitute an Air Traffic Control (ATC) clearance.

**local and suburban and interurban passenger transportation transit**

Includes establishments that provide local and suburban passenger transportation, such as those providing passenger transportation within a single municipality, contiguous municipalities, or a municipality and its suburban areas by bus, rail, car subway, either separately or in combination. Also included are sightseeing, charter, intercity passenger operations, and establishments providing passenger terminal and maintenance facilities.

**local and suburban transit**

Establishments primarily engaged in furnishing local and suburban mass passenger transportation over regular routes and on regular schedules, with operations confined principally to a municipality, contiguous municipalities, or a municipality and its suburban areas. Also included in this industry are establishments primarily engaged in furnishing passenger transportation by automobile, bus, or rail to, from, or between airports or rail terminals over regular routes and those providing bus and rail commuter services.

**local application system**

A fixed fire suppression system which has a supply of extinguishing agent, with nozzles arranged to automatically discharge the extinguishing agent directly on the burning material to extinguish or control a fire.

**Local Area Network (LAN)**

A communication link over which computers and peripherals may be connected within a limited geographical region.

**local bus charter service**

Establishments primarily engaged in furnishing local bus charter service where such operations are principally within a single municipality, contiguous municipalities, or a municipality and its suburban areas.

**local courier service**

Establishments primarily engaged in the delivery of individually addressed letters, parcels, or packages (generally under 100 pounds), except by means of air transportation or by the United States Postal Service. Delivery is usually made by street or highway within a local area or between cities.

**local courts**

Courts whose jurisdiction is limited to a particular territory or district. The term usually refers to the courts of the state, as opposed to the United States courts, or to municipal or county courts in contrast to courts with state-wide jurisdiction.

**local definition**

An elaboration on a more generic definition by providing additional details to suit the purpose of a specialized condition or location.

**local effect**

An effect which occurs to a localized part of the body, such as irritation of the respiratory tract or eyes.

**Local Emergency Planning Committee (LEPC)**

A committee appointed by the state emergency response commission, as required by SARA, Title III to formulate a comprehensive emergency plan for its jurisdiction.

**local exhaust system**

A system composed of an exhaust opening, such as a hood, ductwork to transport exhausted air to a source of suction (fan, educator, etc.), and frequently, an air cleaner to remove contaminants from the exhaust air before discharge to the environment. The air cleaner is typically positioned before the fan in the system to prevent fan wear.

**local exhaust ventilation system**

An air-handling system designed to capture and remove process emissions before they can escape into the workplace or the environment, generally consisting of a hood, conveying ductwork, an air-handling device, a fan, and an exhaust stack.

**local freight**

*Maritime.* Freight movements within the confines of a port, whether the port has only one or several arms or channels (except car ferry and general ferry). The term is also applied to marine products, sand, and gravel taken directly from the Great Lakes.

**local government**

City, county, or other governing body at a level smaller than a state. Local government has the greatest control over real property, zoning, and other local matters.

**local horizontal**

Pertaining to a region within a larger coordinate system in which a secondary, smaller coordinate system defines a horizontal axis or plane.

**local lighting**

That lighting intended to provide illumination only for a small region.

**local magnitude ( $M_L$ )**

A measure of the strain energy released by an earthquake within 100 kilometers of its epicenter. Strictly defined by Charles Richter as the base-10 logarithm of the amplitude, in microns, of the largest trace deflection that would be observed on a standard torsion seismograph at a distance of 100 km from the epicenter. *See also surface-wave magnitude, moment magnitude, and Richter scale.*

**local minimum**

The smallest value within a restricted range of values.

**local operations**

*Aviation.* Performed by aircraft which: a) operate in the local traffic pattern or within sight of the airport; b) are known to be departing for, or arriving from, flight in local practice areas within a 20 mile radius of the airport; c) execute simulated instrument approaches or low passes at the airport. Itinerant operations are all airport operations other than local operations.

**local passenger (not elsewhere classified) transportation**

Establishments primarily engaged in furnishing miscellaneous passenger transportation, where such operations are principally within a single municipality, contiguous municipalities, or a municipality and its suburban areas.

**local roads**

Those roads and streets whose principal function is to provide direct access to abutting land.

**local streets and roads**

Streets whose primary purpose is feeding higher order systems, providing direct access with little or no through traffic.

**local toxic effect**

An effect that is observed at the site of contact. For example, a skin burn from a corrosive substance.

**local traffic**

*Aviation.* (1) Aircraft operating in the traffic pattern or within sight of the tower. (2) Aircraft known to be departing or arriving from flight in local practice areas. (3) Aircraft executing practice instrument approaches at the airport.

**local trip**

An intracity or short mileage trip by a commercial motor vehicle.

**local trucking (with storage)**

Establishments primarily engaged in furnishing both trucking and storage services, including household goods, within a single municipality, contiguous municipalities, or a municipality and its suburban areas.

**local trucking (without storage)**

Establishments primarily engaged in furnishing trucking or transfer services without storage for freight generally weighing more than 100 pounds, in a single municipality, contiguous municipalities, or a municipality and its suburban areas.

**local vertical**

Pertaining to a region within a larger coordinate system in which a secondary, smaller coordinate system defines a vertical axis.

**local winds**

Winds that tend to blow over a relatively small area. Often due to regional effects, such as mountain barriers, large bodies of water, local pressure differences, and other influences.

**localize**

Determine the source of a stimulus or signal in space and/or time.



**localizer**

*Aviation.* The component of an instrument landing system (ILS) which provides the aircraft with course guidance to the runway. *See also glideslope, instrument landing system, middle marker, and outer marker.*

**localizer course**

*Aviation.* The locus of points, in any given horizontal plane, at which the difference in depth of modulation (DDM) is zero.

**localizer type directional aid**

*Aviation.* A Navigational Aid (NAVAID) used for nonprecision instrument approaches with utility and accuracy comparable to a localizer but which is not a part of a complete instrument landing system and is not aligned with the runway.

**localizer usable distance**

*Aviation.* The maximum distance from the localizer transmitter at a specified altitude, as verified by flight inspection, at which reliable course information is continuously received.

**location**

(1) *Damp Location.* Partially protected locations under canopies, marquees, roofed open porches, and like locations, and interior locations subject to moderate degrees of moisture, such as some basements, some barns, and some cold-storage warehouses. (2) *Dry Location.* A location not normally subject to dampness or wetness. A location classified as dry may be temporarily subject to dampness or wetness, as in the case of a building under construction. (3) *Wet Location.* Installations underground or in concrete slabs or masonry in direct contact with the earth, and locations subject to saturation with water or other liquids, such as vehicle-washing areas, and locations exposed to weather or otherwise unprotected.

**location coding**

The identification of controls, devices, or systems through their placement on some panel or other structure.

**location identifier (LOCID)**

*Aviation.* A unique code which is assigned by the Federal Aviation Administration (FAA) to identify each airport.

**locator**

*Aviation.* A low/medium frequency (LM/MF) nondirectional beacon (NDB) used as an aid

to final approach. Note: A locator usually has an average radius of rated coverage of between 18.6 and 46.3 miles (10 and 26 NM).

**LOCID**

*See location identifier.*

**lock**

(1) *General.* A security device used to prevent access or secure property from theft and/or unauthorized use. (2) *Maritime.* An enclosure in a water body with gates at each end to raise or lower water vessels as they pass from one level to another.

**lock cell**

*Maritime.* The chamber of a lock.

**lock gate**

A movable, structural barrier to hold back the water in a lock chamber.

**lock line**

A long line leading from the bow and the stern of the tow to the lock wall.

**lock rod**

*Rail Operations.* A rod, attached to the front rod or lug of a switch, movable-point frog or derail, through which a locking plunger may extend when the switch points or derail are in the normal or reverse position.

**lock traffic lights**

*Maritime.* Red, yellow, and green lights displayed at the entrances of the lock, both up bound and down bound, for the purpose of controlling traffic.

**locking bar**

*Rail Operations.* A bar in an interlocking machine to which the locking dogs are attached.

**locking bed**

*Rail Operations.* That part of an interlocking machine that contains or holds the tappets, locking bars, cross-locking, dogs, and other apparatus used to interlock the levers.

**locking dog**

*Rail Operations.* A steel block attached to a locking bar or tappet of an interlocking machine, by means of which locking between levers is accomplished. *See also dog chart.*

**locking face**

*Rail Operations.* The locking surface of a locking dog, tappet, or cross-locking of an interlocking machine.

**locking sheet**

*Rail Operations.* A description in tabular form of the locking operations in an interlocking machine.

**locking time**

*Maritime.* The total time required for a tow to pass through a locking procedure. This includes approach time, chamber time, and time to clear the lock.

**lockjaw**

See *tetanus*.

**lockout device**

A device that uses a lock and key to hold an energy-isolating device in the safe position for the purpose of protecting personnel.

**lockout/tagout**

A formal procedure for isolating equipment, machinery, or a process to prevent unintentional operation during maintenance, servicing, or for other reasons. The energized equipment, machinery, etc. is first put into an energy-isolated state and each individual who will work on the device places his/her lock and/or tag on the electrical switch or other startup means to keep it in a zero-energy state until the work is completed by each individual who has affixed a lock and/or tag to it. The policy and procedure related to this practice are to clearly and specifically outline the purpose, responsibility, scope, authorization, rules, definitions, and measures to enforce compliance.

**locomotion**

The active movement of the body from one place to another.

**locomotive**

(1) A self-propelled unit of equipment designed for moving other railroad rolling equipment in revenue service including a self-propelled unit designed to carry freight or passenger traffic, or both, and may consist of one or more units operated from a single control. (2) A self-propelled unit of equipment designed primarily for moving other equipment. It does not include self-propelled passenger cars. (3) A piece of on-track equipment other than hi-rail, specialized maintenance, or other similar equipment: a) with one or more propelling motors designed for moving other equipment; b) with one or more propelling motors designed to carry freight or

passenger traffic or both; or c) without propelling motors but with one or more control stands. (4) A self-propelled unit of equipment which can be used in train service.

**locomotive cab**

That portion of the superstructure designed to be occupied by the crew while operating the locomotive.

**locomotive mile**

The movement of a locomotive under its own power the distance of one mile.

**locomotive unit mile**

The movement of a locomotive unit one mile under its own power. Miles of locomotives in helper service are computed on the basis of actual distance run in such service. Locomotive unit miles in road service are based on the actual distance run between terminals and/or stations. Train switching locomotive unit miles are computed at the rate of six miles per hour for the time actually engaged in such service.

**locomotor system**

The various bodily systems, structures, and tissues used in locomotion.

**LOD**

See *limit of detection*.

**loft**

The trapped air in clothing.

**log**

Abbreviation for logarithm.

**log<sub>10</sub>**

Logarithm to the base 10.

**log body**

Truck or trailer designed for the transportation of logs or other loads which may be boomed or chained in place.

**logarithm**

A function represented by the real-valued exponent of some base number.

**logarithmic interval scale**

An alternative to the basic measurement scales in which the magnitudes corresponding to points are given by:

$$\log x_n - \log x_{n+1} - \log x_{n+2}, \text{ etc.}$$

**logic gate**

As pertains to the system safety applications of fault tree analysis (FTA) and/or the man-

agement oversight and risk tree (MORT), a symbol used to identify the association between events on a logic tree.

**log-normal distribution**

The distribution of the logarithms of a random variable that has the property that the logarithms are normally distributed.

**log-normally distributed variable**

A variable is considered to be log-normally distributed if the logarithms of the variable are normally distributed.

**long bone**

Any bone whose length greatly exceeds its width.

**long range navigation (LRNAV)**

*Aviation.* A method of navigation that permits navigation over long distances. This is in contrast to the relatively short range navigation provided by the Very high frequency Omni-directional Range (VOR) radio system.

**long term**

Pertaining to events or conditions which develop or are maintained for an extended period of time, typically on the order of years.

**long-term exposure**

Continuous or repeated exposure of an individual to a substance or agent over a period of several years or working lifetime.

**long-term memory**

A coded form of memory which apparently exists indefinitely.

**long ton**

A unit of mass in the English system equal to 2,240 pounds.

**long-waisted**

*(slang)* Having a longer than normal trunk for the total stature.

**long wavelength infrared**

*See far infrared.*

**long waves in the westerlies**

A wave in the major belt of westerlies characterized by a long length (thousands of kilometers) and significant amplitude. Also called *Rossby waves*.

**longer combination vehicles**

Any combination of truck tractor and two or more trailers or semitrailers which operates on

the Interstate System at a gross vehicle weight greater than 80,000 pounds.

**longitudinal**

*Transit.* Parallel to the longitudinal centerline of the vehicle.

**longitudinal axis**

An approximate centerline of a body segment which is parallel to the length dimension of that segment.

**longitudinal design**

Any research methodology in which data are collected from the same individual(s) over a long period of time.

**longitudinal separation**

*Aviation.* The longitudinal spacing of aircraft at the same altitude by a minimum distance expressed in units of time or miles.

**longitudinal study**

An experiment or observation using a longitudinal design.

**longitudinal wave**

A waveform in which the direction of propagation and displacement is the same.

**Longshore and Harbor Workers' Compensation Act**

Federal Act (33 U.S.C.A § 901 et seq.) designed to provide workers' compensation benefits to employees, other than seamen, or private employers any of whose employees work in maritime employment upon the navigable waters of the United States (including any adjoining pier, wharf, dry dock, terminal, building way, marine railway, or other adjoining area customarily used by an employer in loading, unloading, repairing, or building a vessel). The primary occupations subject to the Act are stevedoring and ship service operations. The Act is administered by the Office of Workers' Compensation Programs.

**longshoreman**

A maritime laborer, such as a stevedore or loader, who works about wharves of a port. A person who loads and unloads ships.

**longshoring operations**

The loading, unloading, moving, or handling of cargo, ship's stores, gear, etc. into, in, on, or out of any vessel on the navigable waters of the United States.

**longwave radiation**

A term most often used to describe the infrared energy emitted by the earth and the atmosphere.

**LOQ**

See *limit of quantitation*.

**Loran**

An electronic navigational system by which hyperbolic lines of position are determined by measuring the difference in the time of reception of synchronized pulse signals from two fixed transmitters. Loran A operates in the 1750-1950 kHz frequency band. Loran C and D operate in the 100-110 kHz frequency band.

**lordosis**

A curving of the cervical-lumbar regions of the spine in the sagittal plane to yield an anterior convexity.

**LOS**

See *line of sight*.

**loss**

(1) *General*. A generic and relative term that signifies the act of losing or the thing lost; it is not a word of limited, hard, and fast meaning and has been held synonymous with, or equivalent to, *damage, damages, deprivation, detriment, injury, and privation*. (2) *Finance*. Expenses exceeding costs, or, actual losses. Bad and uncollectable accounts, damage; a decrease in value of resources or an increase in liabilities; depletion or depreciation or destruction of value. (3) *Insurance*. A state of fact of being lost or destroyed; ruin, or destruction. (4) *System Safety*. Anything that increases costs or reduces productivity and has any adverse effect on the organization or society resulting from either normal operations or unplanned events. (5) *Ventilation*. Usually refers to the conversion of static pressure to heat, noise, or vibration in components of the ventilation system (e.g., the hood entry loss). (6) *Law*. Loss is a generic and relative term. It signifies the act of losing or the thing lost. It is not a word of limited, hard and fast meaning and has been held synonymous with, or equivalent to *damage, deprivation, detriment, injury, and privation*.

**loss control**

The overall objective of accident investigation. A management responsibility to prevent or control the occurrence of those events

which downgrade performance, negatively impact productivity, or otherwise result in a loss of some nature and degree.

**loss ratio**

Term used in the insurance industry. A ratio calculated by dividing the amount of loss(es) by the amount of premium(s). Normally expressed as a percentage of the premiums.

**lost communications**

*Aviation*. Loss of the ability to communicate by radio. Aircraft are sometimes referred to as NORDO (No Radio). Standard pilot procedures are specified in Federal Aviation Regulation (FAR) Part 91. Radar controllers issue procedures for pilots to follow in the event of lost communications during a radar approach when weather reports indicate that an aircraft will likely encounter instrument flight rules (IFR) weather conditions during the approach.

**lost time**

(1) That time which an individual would normally be at his/her workplace but is not due to an occupational illness or injury. (2) See *delay time*.

**lost time accident**

An accident which results in a significant period of time away from the job.

**lost time illness**

An occupational illness which results in more than one day off from work, usually referring to something more serious than a minor illness.

**lost-time injury**

A work injury resulting in death or disability and in which the injured person is not able to work the next regularly scheduled shift.

**lost workdays**

(1) *General*. Under OSHA 29 CFR 1904.12(f), the number of days (consecutive or not) after, but not including, the day of injury or illness during which the employee would have worked but could not do so; that is, could not perform all or any part of his/her normal assignment during all or any part of the workday or shift, because of the occupational injury or illness. (2) *Lost Workday - Away from Work*. A day on which the employee would have worked but could not because of occupational injury or illness. This does NOT include the day of the injury or on-

set of illness or any days on which the employee would not have worked anyway (such as a weekend or holiday). (3) *Lost Workday - Restricted Work Activity*. A day on which, because of injury or illness, the employee was assigned to another job on a temporary basis; or, worked at a permanent job less than full time; or worked at a permanently assigned job but could not perform all duties normally connected with that job. This does not include the day of the injury or onset of illness or any days on which the employee would not have worked anyway (such as a weekend or holiday). (4) *Rail Operations*. Any full day or part of a day (consecutive or not) other than the day of injury, that a railroad employee is away from work because of injury or occupational illness.

#### **loudness**

An observer's impression of a sound's amplitude; a purely subjective assessment. The intensive attribute of an auditory sensation, in terms of which sounds may be arranged on a scale extending from soft to loud. It depends primarily on the sound pressure of the stimulus, as well as on its frequency and wave form.

#### **loudness contour**

A curve of sound pressure level values plotted against frequency which are required to produce a given loudness sensation for a normal listener.

#### **loudness level**

The loudness level of a sound, in phons, is numerically equal to the median sound pressure level, in decibels, relative to 2 E-4 microbar, of a free progressive wave of 1000 hertz presented to listeners facing the source, which in a number of trials, is judged by the listeners to be equally loud.

#### **louse**

(plural is *lice*) A general name for various parasitic insects. The true lice, which infest mammals, belong to the suborder *Anoplura*. They are grayish, wingless insects that vary in length from on-sixth to one-sixteenth of an inch.

#### **louver**

Panels used in hoods for distributing airflow at the hood face.

#### **low**

See *extratropical cyclone*.

#### **low altitude airway structure (LAAS)**

The network of airways serving aircraft operations up to but not including 18,000 feet mean sea level (MSL).

#### **low altitude alert system (LAAS)**

An automated function of the TPX42 that alerts the controller when a Mode C transponder-equipped aircraft on an instrument flight rules (IFR) flight plan is below a predetermined minimum safe altitude. If requested by the pilot, low altitude alert system monitoring is also available to visual flight rules (VFR) Mode C transponder-equipped aircraft.

#### **low approach**

An approach over an airport or runway following an instrument approach or a visual flight rules (VFR) approach including the go-around maneuver where the pilot intentionally does not make contact with the runway.

#### **low boy**

A low trailer for hauling heavy machinery.

#### **low density lipoprotein (LDL)**

A substance present in the blood which carries high levels of cholesterol, occasionally depositing it on arterial walls as plaque. See also *high density lipoprotein* and *lipoprotein*.

#### **low density wood**

That wood which is exceptionally light in weight and usually deficient in strength properties for the species.

#### **low emission vehicle**

A clean fuel vehicle meeting the low-emission vehicle standards.

#### **low frequency**

The frequency band between 30 and 300 kHz.

#### **low-hazard contents**

Those contents of such low combustibility that no self-propagating fire therein can occur and that consequently the only probable danger requiring the use of emergency exits will be from panic, fumes, or smoke, or fire from some external source.

#### **low-hazard permit space**

A confined space in which there is an extremely low likelihood that an immediately dangerous to life and health (IDLH) or en-

gulfment hazard could be present and in which all other potentially serious hazards have been controlled.

**low head**

Vertical difference of 100 feet or less in the upstream surface water elevation (headwater) and the downstream surface water elevation (tailwater) at a dam.

**low impact resistant supports (LIRS)**

*Aviation.* Supports designed to resist operational and environmental static loads and fail when subjected to a shock load such as that from a colliding aircraft.

**low-level jet stream**

Jet streams that typically form near the earth's surface below an altitude of about 2 km and usually attain speeds of less than 60 knots.

**low-level radioactive waste**

Under the Federal Nuclear Waste Policy Act of 1982: Radioactive material that is not high-level radioactive waste, spent nuclear fuel, transuranic waste, or byproduct material.

**low-noise emission product determination**

An EPA determination of whether or not a product, for which a properly filed application has been received, meets the low-noise emission product criterion.

**low-order detonation**

See *detonation*.

**low type road surface**

Bituminous surface-treated Surface/Pavement Type Code 51.

**low water dam**

(1) A low-level dam designed to hold back a head of water so as to maintain project depth in a certain area. The dam may be visible at the low water stage. (2) A dam that is more effective at low water; at high water the dam becomes a weir. See also *weir*.

**low water datum**

A term used by the Army Corps of Engineers to define their originating point of elevation in determining stages of water when erecting various gauges along a river.

**lower detectable limit (LDL)**

*Instruments.* The smallest concentration of the substance of interest that produces an output change in a reading of at least twice the noise level.

**lower explosive limit (LEL)**

The concentration of a compound in air below which a flame will not propagate if the mixture is ignited. Also referred to as *lower flammable limit*.

**lower flammable limit (LFL)**

Often referred to as the Lower Explosive Limit (LEL), it is the lowest concentration of gas or vapor in the air that will propagate a flame if a spark or heat source is present. See also *lower explosive limit*.

**lower gauge**

A gauge located in the tailwater of a dam (downstream side); colloquially called *tail-gate*.

**lower-half of saddle-mount**

*Transit.* That part of the device which is securely attached to the towing vehicle and maintains a fixed position relative thereto but does not include the "king-pin."

**lowest achievable emission rate**

According to the Clean Air Act, this is the rate of emissions which reflects either the most stringent emission limitation which is contained in the implementation plan of any state for such source (unless the owner or operator of the proposed source demonstrates such limitations are not achievable), or the most stringent emissions limitation achieved in practice, whichever is more stringent. Application of this term does not permit a proposed new or modified source to emit pollutants in excess of existing new source standards.

**lowest observed adverse effect level (LOAEL)**

In dose-response experiments, the experimental exposure level representing the lowest tested at which adverse effects were demonstrated.

**lowpass filter**

A device which allows frequencies lower than the cutoff frequency to exit from the device unattenuated, while the intensity of frequencies higher than the cutoff frequency is attenuated.

**LPG**

See *liquid petroleum gas*.

**LPM**

Liter(s) per minute.



**LRNAV**

See *long range navigation*.

**LRS**

See *linear referencing system*.

**LSD**

See *lysergic acid diethylamide*.

**LSO**

Laser safety officer.

**LTL**

See *less than truckload*.

**lubricating oil**

Under the Federal Solid Waste Disposal Act: The fraction of crude oil which is sold for purposes of reducing friction in any industrial or mechanical device. Such term includes re-refined oil.

**lumbago**

A low level of pain in the lumbar region of the back.

**lumbar**

Refers to the five vertebrae of the lower back between the thorax and the pelvis.

**lumbar disk**

An intervertebral disk separating the lumbar vertebrae in the spine.

**lumbar vertebra**

Any of the vertebral bones in the lumbar spine, L1–L5.

**lumber body**

Platform truck or trailer body with traverse rollers designed for the transportation of sawed lumber.

**lumbosacral angle**

The angle between the posterior of the lumbar spine and the sacrum.

**lumen**

(1) Used to represent total light output; the unit of luminous flux emitted through a unit solid angle from a uniform point source of one candela. (2) A hole or passage in a tube-like structure within the body.

**lumen depreciation**

That decrease in luminous flux emitted by certain types of light sources over time.

**lumen-hour (lm-hr)**

A unit for that amount of light delivered by a luminous flux in one hour.

**lumen-second (lm-sec)**

See *talbot*.

**luminaire**

A complete light fixture including the lamp, parts to distribute the light, position the fixture, and connect the lamp to the power supply.

**luminaire dirt depreciation**

The loss of luminous flux from lighting due to dirt collection on the luminaire or particulates in the atmosphere. A recoverable lighting loss factor.

**luminaire surface depreciation**

Any reduction in luminous output due to physical or chemical changes in materials associated with a luminaire, such as transmittance through or reflections from enclosing materials. A non-recoverable light loss factor.

**luminance**

A physical measure of the luminous flux per unit solid angle incident on a surface. An older term. Synonymous with *photometric brightness*. See also *brightness*.

**luminance contrast**

A measure of the physical relationship in luminance between two adjacent, non-specular surfaces under the same general illumination and immediate surroundings, generally defined by an equation similar to the form below. See also *brightness contrast*.

$$C_L = \frac{\Delta L}{L}$$

**luminance ratio**

The value of the ratio between the luminance of any two surfaces or objects in the visual field.

**luminescence**

The emitting of light due to some mechanism other than high temperatures.

**luminosity**

A measure of the relative efficiency of various wavelengths of visible light for exciting the retina.

**luminosity function**

See *spectral luminous efficiency function*.

**luminous efficacy, flux**

The value of the ratio of the total luminous flux to the total radiant flux encompassing all wavelengths.

**luminous efficacy, source**

The value of the ratio of the total luminous flux emitted by a lamp to the total electrical power input.

**luminous efficiency function**

See *spectral luminous efficiency function*.

**luminous environment**

That portion of the visual environment generated by the luminaire type, luminous intensity, direction, and hues.

**luminous flux ( $\Phi$ )**

The rate of visible light energy emitted from a source over time.

**luminous intensity**

A measure of the power of a light source in terms of luminous flux per unit solid angle.

**lunate bone**

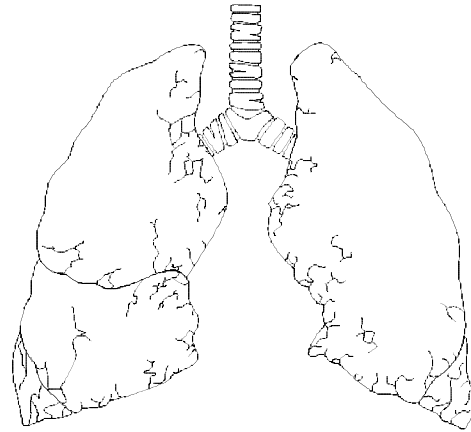
One of the proximal bones of the wrist.

**lung**

One of the asymmetrical bilateral organs within the chest which is involved in gaseous respiration. The lungs supply the blood with oxygen inhaled from the outside air, and they dispose of waste carbon dioxide in the exhaled air, as part of the respiration process. The lungs are made of elastic tissue filled with interlacing networks of tubes and sacs carrying air, and with blood vessels carrying blood. The bronchi, which bring air to the lungs, branch out within the lungs into many smaller tubes, the bronchioles, which culminate in clusters of tiny air sacs called alveoli, whose total runs into the millions. The alveoli are surrounded by a network of capillaries. Through the thin membranes of the capillaries, the air and blood make their exchange of oxygen and carbon dioxide. The lungs are divided into lobes, the left lung having two lobes and the right lung having three. The lungs are inflated and deflated via the action of the diaphragm and the intercostal muscles.

**lung diffusing capacity**

A measure of the amount of gas at standard temperature and pressure (STP) which diffuses across the pulmonary membrane in the alveolus.



*The human lungs and trachea*

**lung expiratory reserve volume**

See *expiratory reserve volume*.

**lung function test**

A test, usually employing a spirometer, that measures an individual's breathing capacity and, indirectly, their ability to wear a respirator.

**lung functional residual capacity**

See *functional residual capacity*.

**lung inspiratory capacity**

See *inspiratory capacity*.

**lung vital capacity**

See *vital capacity*.

**lung volume**

The volume of measurable gas in the lungs under specified conditions.

**lunula**

The lighter-colored portion of the nail body near the nail root of the hand or foot.

**lupus**

Tuberculosis of the skin marked by the formation of brownish nodules on the corium, called *lupus vulgaris*.

**lupus erythematosus**

An inflammatory disease that takes two forms. One, the systemic or disseminated form, causes deterioration of the connective tissues in various parts of the body. This disease may attack the soft internal organs as well as the bones and muscles, and is often fatal. In its other form, the discoid type, it is a fairly mild skin disorder. Symptoms of the more serious form vary widely, but may include fever, abdominal pains, and pains in the muscles and joints. Often the symptoms

come and go over a long period of time. Diagnosis of the disease is difficult. The cause is unknown, but the disease is believed not to be infectious and possibly to be related to allergies. Lupus erythematosus is one of a group of similar disorders known as the collagen diseases. There is no specific treatment, though corticosteroids may be used to control symptoms.

**LUST**

Leaking underground storage tank.

**lustermeter**

A device developed by Hunter to measure contrast gloss and compute luster.

**lux (lx)**

Metric unit of illuminance equal to one lumen per square meter. One foot-candle is equal to 10.76 lux. Dividing the lux value by 10 provides the approximate equivalent foot-candle value.

**LV%**

Liquid volume percent.

**lx**

See *lux*.

**lying**

Pertaining to a posture in which an individual's torso is horizontal to a reference surface, but not prone, with possible flexion of the hips and knees.

**Lyme disease**

A bacterial disease transmitted to man by a tick bite. Symptoms of Lyme disease, including rash, headache, fever, tiredness, numbness, and others, mimic those of many other diseases and, therefore, Lyme disease may often be initially misdiagnosed. It was first identified in the community of Lyme, Connecticut and, hence, the name.

**lymph**

The water and various dissolved substances and particulates which enter the lymphatic system from the interstitial fluid. It is a colorless, odorless fluid, slightly alkaline, and has a salty taste. Lymph is approximately 95% water; the remainder consists of plasma proteins and other chemical substances contained in the blood plasma, but in a slightly smaller percentage than in plasma. In addition, the lymph contains a high concentration of lymphocytes. The body contains three

main kinds of fluid: blood, tissue fluid, and lymph. The blood consists of the blood cells and platelets, the plasma, or fluid portion, and a variety of chemical substances dissolved in the plasma. When the plasma, without its solid particles and some of its dissolved substances, seeps through the capillary walls and circulates among the body tissues, it is known as tissue fluid. When this fluid is drained from the tissues and collected by the lymphatic system, it is called lymph. The lymphatic system eventually returns the lymph to the blood, where it again becomes plasma.

**lymph gland**

See *lymph node*.

**lymph node**

An ovoid-shaped structure occurring in lymph vessels which serves as a collection and filtration point for lymph in fighting infection. Lymph nodes filter and destroy invading bacteria and are the site of production of lymphocytes and certain antibodies. The main lymph nodes are in the neck, axillae, and groin. Sometimes called, incorrectly, *lymph gland*.

**lymph vessel**

Any of a range of diameters of tubular structures from capillary size to those resembling moderate-sized veins in the cardiovascular system which carry lymph.

**lymphatic**

Pertaining to lymph, lymph vessels, or lymph nodes.

**lymphatic ducts**

The two larger vessels into which all lymphatic vessels converge. The right lymphatic duct joins the venous system at the junction of the right internal jugular and subclavian veins and carries lymph from the upper right side of the body. The left lymphatic duct, or thoracic duct, enters the circulatory system at the junction of the left internal jugular and subclavian veins; it returns lymph from the upper left side of the body and from below the diaphragm.

**lymphatic system**

The fluid and the various structures involved in collecting interstitial fluid, removing foreign particles, and returning the fluid ultimately to the cardiovascular system.

**lymphocyte**

A white blood cell found in lymphatic tissues (e.g., lymph nodes, spleen, thymus) that is immunologically important and attacks invading pathogens.

**lymphocytopenia**

Reduction in the number of lymphocytes in the blood.

**lymphogranuloma**

See *Hodgkin's disease*.

**lymphoma**

(1) A primary tumor of lymphoid tissue. (2) Any one of various conditions of unknown etiology chiefly affecting lymph nodes, considered to be neoplastic. (3) Various abnormally proliferative diseases of the lymphoid tissue of the lymphatic system. A tumor of lymphoid tissue. Also called *malignant lymphoma*.

**lysergic acid diethylamide (LSD)**

A hallucinogenic compound chemically related to ergot, having consciousness-expanding effects and capable of producing a state of mind in which there is false sense perception (hallucination). The perceptual changes brought about by LSD in normal persons are extremely variable and depend on factors such as age, personality, education, physical make-up, and state of health. The danger of the drug lies in the fact that it loosens control over impulsive behavior and may lead to a full-blown psychosis or less serious mental disorder in persons with latent mental illness. LSD was first developed in 1938 and was believed to be potentially useful in the treatment of mental illness. This theory was based on the belief that the drug could produce a schizophrenic syndrome and that psychiatrists and other persons concerned with mental illness could observe the manifestations of a psychosis under controlled conditions. However, competent investigators have shown that the effect of LSD is more closely related to a toxic psychosis such as that produced by fever, stress, or drugs of many kinds and is of doubtful use in understanding the mechanism of true psychosis resulting from severe mental disorder.

**lysin**

A substance that causes lysis; an antibody that causes dissolution of cells or other material.

**lysine**

A naturally occurring amino acid, one of those essential for human metabolism.

**lysis**

(1) Destruction or decomposition, as of a cell or other substance, under the influence of a specific agent. (2) Solution or separation, as of adhesions binding different anatomic structures. (3) Gradual abatement of the symptoms of a disease.

**lysoenzyme**

A crystalline, basic protein, which is present in saliva, tears, egg white, and many animal fluids and which functions as an antibacterial enzyme.

**lysosome**

A minute body occurring in a cell and containing various enzymes, mainly hydrolytic.

**lysotype**

(1) The type of microorganism as determined by its reactions to specific bacteriophages. (2) A taxonomic subdivision of bacteria based on their reactions to specific bacteriophages, or a formula expressing the reactions on which such a subdivision is based.

# M

## M

Molar (solution).

### M-1 maneuver

A technique for air crew personnel to prevent gravity-induced loss of consciousness due to high positive acceleration maneuvers in aircraft, in which the crew member generally grunts with the glottis partially closed to increase intrathoracic pressure, thereby increasing blood pressure and blood flow to the brain. *See also anti-g straining maneuver.*

### m<sup>3</sup>

Cubic meter (1000 liters (L) or 1,000,000 milliliters).

### mA

Milliamp.

### maceration

The softening of a solid by soaking; wasting away, softening and fraying, as if by action of soaking.

### mach

A unit representing the velocity of sound, usually in air.

### mach indicator

An aircraft or spacecraft display which provides the vehicle's velocity as a ratio to velocity of sound.

### mach number

The ratio of true airspeed to the speed of sound.

### mach technique

*Aviation.* Describes a control technique used by air traffic control whereby turbojet aircraft operating successively along suitable routes are cleared to maintain appropriate mach numbers for a relevant portion of the en route phase of flight. The principal objective is to achieve improved utilization of the airspace and to ensure that separation between successive aircraft does not decrease below the established minima.

### machine

A mechanically or electromechanically powered device consisting of both fixed and

moving parts and having one or more specific functions.

### machine ancillary time

That time during which a machine is unavailable for use due to calibration, changeover, cleaning, or other related causes.

### machine assignment

That function or operator to which a machine is assigned.

### machine attention time

That time during which an operator must observe a machine's operations in the event intervention or servicing is required. Does not involve actually operating for production or servicing the machine.

### machine available time

That time during which a machine is performing or could perform work.

### machine capacity

Some measure of the normally expected output from a machine.

### machine-controlled time

That time in a given work cycle which a machine requires to perform its portion of a task or process, independent of an operator.

### machine-controlled time allowance

The expected or scheduled time given a worker for a machine to perform its portion of a given task.

### machine cycle time

That time required for a machine to perform one complete cycle of a process.

### machine downtime

That amount of time during which a machine is not able to perform its designated function due to a breakdown, routine servicing, or a materials shortage.

### machine effective utilization index (MEUI)

The value of the ratio of the time which a machine is running under standard conditions compared to the time which the machine is available.

### machine efficiency index (MEI)

The value of the ratio of the machine standard running time to the machine running time.

### machine element

A work element performed entirely by a machine.

**machine guard**

Any piece of equipment or device on a machine intended to reduce or eliminate the chance of injury through the use of that machine.

**machine hour**

A unit of measure for the utilization of machines, corresponding to one machine working for one hour.

**machine idle time**

The amount of time a machine is available but not productive due to the operator performing other work, due to a shortage of materials, etc.

**machine interference**

A situation in which a demand for simultaneous operator attention by two or more machines results in machine idle time.

**machine load**

The proportion or percentage of scheduled or actual usage of machine available time during a given time interval.

**machine maximum time**

The total time in a day, week, or other time period during which one or more machines could work.

**machine-paced work**

That restricted or externally paced work in which machinery controls the rate at which the work cycle progresses.

**machine running time**

The actual operating, productive time by a machine.

**machine standard running time**

That time at which a machine operates at optimum capacity.

**machine utilization index**

The value of the ratio of the amount of time a machine is running compared to the time it is available.

**Mackinaw boat**

A crudely built flatboat used on the Ohio and Upper Mississippi Rivers during the 18th century.

**macro-**

- (1) *Prefix.* Large, large-scale, or long-length.
- (2) *Computing.* A set of keystrokes or computer instructions which may be executed with a single command.

**macro-command**

That command which initiates a macro-execution.

**macrobiota**

The macroscopic living organisms of a region.

**macroblast**

An abnormally large, nucleated erythrocyte.

**macrochemistry**

Chemistry in which the reactions may be seen with the naked eye.

**macroclimate**

The general climate of a large area, such as a country.

**macrocrania**

Abnormal increase in the size of the skull in relation to the face.

**macroelement**

A work element which is of sufficiently long duration to permit observation and timing with a manually operated stopwatch or stop-clock.

**macrometeorology**

Meteorological characteristics of a regional area, such as part of a province, region, state, or of a larger area.

**macrophage**

A typically large and long-lived cell originating in the bone marrow and distributed throughout the body that plays an important role in immunity by either engulfing invading microorganisms, through the production of antibodies, or by presenting antigens to lymphocytes for destruction.

**macroscale**

The normal meteorological synoptic scale for obtaining weather information. It can cover an area ranging from the size of a continent to the entire globe.

**macroscopic**

Visible to the eye without the aid of a microscope.

**macroskelic**

Having long legs relative to the torso length.

**MACT**

See maximum achievable control technology.



**macula**

(1) The area of the eye that is most responsive for color vision. Also, an opacity of the cornea. (2) A stain or spot, especially a discolored spot on the skin that is not elevated above the surface.

**macula lutea**

The yellow-colored central region of the fovea, at which visual acuity is greatest.

**macular degeneration**

A disease of the macula, the center of the retina, which is responsible for detailed vision. The most common form is characterized by the thinning of the yellowish macular pigment, scarring, and accumulation of oxidized fats called lipofuscin or drusen.

**MADD**

Mothers Against Drunk Driving.

**maduromycosis**

A chronic fungus affecting various body tissues, including the hands, legs, and feet. The most common form affects the foot (Madura foot) and is characterized by sinus formation, necrosis, and swelling. Also called *mycetoma*.

**magazine**

Any building or structure, other than an explosives manufacturing building, used for the storage of explosives.

**magazine vessel**

A vessel used for the receiving, storing, or dispensing of explosives.

**maggot**

The soft-bodied larva of an insect, especially one living in decaying flesh.

**magma**

(1) A suspension of finely divided material in a small amount of water. (2) A thin, paste-like substance composed of organic material.

**magnesium**

A chemical element, atomic number 12, atomic weight 24.312, symbol Mg.

**magnet**

An object having polarity and capable of attracting iron.

**magnetic field**

That vector field generated by a magnetic substance or which exists in conjunction with

an electric field via current condition or electromagnetic radiation.

**magnetic levitation (MAGLEV)**

A rail transportation system with exclusive right-of-way which is propelled along a fixed guideway system by the attraction or repulsion of magnets on the rails and under the rail cars.

**Magnetic Resonance Imaging (MRI)**

The use of a combined static and radio frequency electromagnetic field to measure energy absorption by certain atoms, which can be processed and presented as an image cross-section of the body, a body segment, or any other object transparent to the electromagnetic field.

**magnetic storm**

A worldwide disturbance of the earth's magnetic field caused by solar disturbances.

**magnetosphere**

The region around the earth in which the earth's magnetic field plays a dominant part in controlling the physical processes that take place.

**magnetotherapy**

Treatment of disease by the use of magnetic currents.

**magnitude**

(1) *General*. The numerical absolute value of a vector. (2) *Seismology*. A general term for a measure of the strength or energy of an earthquake as determined from seismographic information. More specifically, it is a measure of the size of an earthquake. The Richter Scale, named after Charles F. Richter of the California Institute of Technology, is the best known scale for the measuring of magnitude (M) of earthquakes. The scale is logarithmic; a recording of 7, for example, signifies a disturbance with ground motion 10 times as large as a recording of 6. The energy released by an earthquake of M 7, however, is approximately 30 times that released by an earthquake of M 6; an earthquake of M 8 releases 900 times (30x30) the energy of an earthquake of M 6. An earthquake of magnitude 2 is the smallest earthquake normally felt by humans. Earthquakes with a Richter value of 5 or higher are potentially damaging. Some of the world's largest recorded earthquakes include one on January 31, 1906, off

the coast of Colombia and Ecuador, and on March 2, 1933, off the east coast of Honshu, Japan, had magnitudes of 8.9 on this scale, which is open ended. As the Richter scale does not adequately differentiate between the largest earthquakes, a new "moment magnitude" scale is being used by seismologists to provide a better measure. On the moment magnitude scale, the San Francisco earthquake is estimated at magnitude 7.7 compared to an estimated Richter magnitude of 8.3.

**mail revenue**

Revenues from the carriage of mail bearing postage for air transportation. Both U.S. and foreign mail that go by air on priority and nonpriority bases.

**main**

(1) *General*. The primary thing of consideration. (2) *Ventilation*. A duct or pipe connecting two or more branches of an exhaust system to the exhaustor or air-cleaning equipment. (3) *Gas Industry*. A distribution line that serves as a common source of supply for more than one gas service line.

**main deck**

*Maritime*. The lowest deck on a river steamboat. The main deck supports the vessel's engines and boilers and has space for fuel and cargo.

**main event**

See *contributory event*.

**main heating fuel**

Fuel that powers the main heating equipment.

**main menu**

The top-level menu within a software package.

**main rotor**

The rotor that supplies the principal lift to a rotorcraft.

**main stem**

The main portion of navigable channel of a river where more than one channel exists.

**main track**

A track, other than an auxiliary track, extending through yards or between stations, upon which trains are operated by timetable or train order or both, or the use of which is governed by a signal system.

**mainshock**

*Seismology*. The largest earthquake in any series of earthquakes. To be definitively called a mainshock, it should generally be at least half a magnitude unit larger than the next largest quake in the series. Otherwise, the series of quakes may more accurately fit the definition of a swarm. See also *swarm*.

**maintain**

*Aviation*. (1) Concerning altitude flight level, the term means to remain at the altitude flight level specified. The phrase "climb and" or "descend and" normally precedes "maintain" and the altitude assignment, e.g., "descend and maintain 5,000." (2) Concerning other Air Traffic Control (ATC) instructions, the term is used in its literal sense, e.g., maintain visual flight rules (VFR).

**maintainability**

An expression of the ability of a given product or system to be maintained (with minimum maintenance and repair) and remain in intended service throughout the operational phase of the product life cycle.

**maintained illuminance**

That proportion of initial illuminance which a light or luminaire retains over some specified period of time.

**maintenance**

(1) The performance of those functions necessary to keep a machine, process, or system in or return it to a proper state of repair for safe and/or efficient operation. (2) Inspection, overhaul, repair, preservation, and the replacement of parts, but excludes preventive maintenance. (3) All expenses, both direct and indirect, specifically identifiable with the repair and upkeep of property and equipment. (4) The performance of services on fire protection equipment and systems to assure that they will perform as expected in the event of a fire. Maintenance differs from inspection in that maintenance requires the checking of internal fittings, devices, and agent supplies. See also *preventive maintenance*.

**maintenance control center (MCC)**

*U.S. Government*. Responsible for the oversight of authorization for vehicle repair and authorization and certification of maintenance and repair invoices for Interagency Fleet Management System (IFMS) vehicles within

the specified region(s). The MCC also contacts vendors to schedule vehicle services. See also *preventive maintenance*.

**maintenance management**

The process of deciding what type of maintenance will be used for systems under an individual's or organization's control, which may include a) the conducting of tradeoff studies, b) a decision as to what risks are acceptable and what are not, c) the scheduling and implementation of maintenance, and d) the development of maintenance procedures.

**maintenance time**

That time estimated, allowed, used, or required to perform some act of maintenance on a system.

**major alteration**

*Aviation.* An alteration not listed in the aircraft, aircraft engine, or propeller specifications that a) might appreciably affect weight, balance, structural strength, performance, powerplant operation, flight characteristics, or other qualities affecting airworthiness; or b) might be done according to accepted practices cannot be done by elementary operations.

**major axis**

The longer axis in defining an ellipse.

**major carrier group**

Air carrier groups with annual operating revenues exceeding \$1,000,000,000.

**major crimes**

A loose classification of serious crimes such as murder, rape, armed robbery, etc.

**major defect**

A defect which results in a serious malfunction of a product.

**major emitting facility**

Under the Federal Clean Air Act, any of the following stationary sources of air pollutants which emit, or have the potential to emit, one hundred tons per year or more of any air pollutant from the following types of stationary sources: fossil-fuel fired steam electric plants of more than two hundred and fifty million British thermal units per hour heat input; coal cleaning plants (thermal dryers); kraft pulp mills; Portland Cement plants; primary zinc smelters, iron and steel mill plants; primary aluminum ore reduction plants; primary copper smelters; municipal incinerators capable

of charging more than fifty tons of refuse per day; hydrofluoric; sulfuric; and nitric acid plants; petroleum refineries; lime plants; phosphate rock processing plants; coke oven batteries; sulfur recovery plants; carbon black plants (furnace process); primary lead smelters; fuel conversion plants; sintering plants; secondary metal production facilities; chemical process plants; fossil-fuel boilers of more than two hundred and fifty million British thermal units per hour heat input; petroleum storage and transfer facilities with a capacity exceeding three hundred thousand barrels; taconite ore processing facilities; glass fiber processing plants; charcoal production facilities. Such term also includes any other source with the potential to emit two hundred and fifty tons or more per year of any air pollutant. This term shall not include new or modified facilities which are nonprofit health or education institutions which have been exempted by the state.

**major fuel**

Fuels or energy sources such as electricity, fuel oil, liquefied petroleum gases, natural gas, district steam, district hot water, and district chilled water.

**major injury**

An occupational or other injury which results in a loss of time to the injured person and a medical expense.

**major interstate pipeline company**

A company whose combined sales for resale, including gas transported interstate or stored for a fee, exceeded 50 million thousand cubic feet in the previous year.

**major mishap**

An event or incident that has the potential of resulting in a fatality or major damages, such as the loss of a facility.

**major modification**

This term is used to define modifications with respect to prevention of significant deterioration (PSD) and new source review under the Clean Air Act and refers to modifications to major stationary sources of emissions and provides significant pollutant increase levels below which a modification is not considered major. See also *prevention of significant deterioration, new source, and major stationary source*.

**major repair**

*Aviation.* A repair that, if improperly done, might appreciably affect weight, balance, structural strength, performance, powerplant operation, flight characteristics, or other qualities affecting airworthiness; or that is not done according to accepted practices or cannot be done by elementary operations.

**major river**

A river that, because of its velocity and vessel traffic, would require a more rapid response in case of a worst case discharge.

**major source**

According to the Federal Clean Air Act: Any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit, in the aggregate, 10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants. The EPA Administrator may establish a lesser quantity, or in the case of radionuclides different criteria, for a major source than that specified in the previous sentence, on the basis of the potency of the air pollutant, persistence, potential for bioaccumulation, other characteristics of the air pollutant, or other relevant factors.



*Major stationary sources are very closely regulated*

**major stationary sources**

Term used to determine the applicability of prevention of significant deterioration (PSD) and new source regulations. In a nonattainment area, any stationary pollutant source that has a potential to emit more than 100 tons per year is considered a major source. In PSD areas, the cutoff level may be either 100 or 250 tons, depending upon the type of source. *See also prevention of significant deterioration.*

**make-or-buy analysis**

A study to determine whether it is more advantageous to develop and produce an item in-house or purchase the item from outside sources.

**make-ready allowance**

*See setup allowance.*

**make short approach**

*Aviation.* Communication Protocol. Used by Air Traffic Control (ATC) to inform a pilot to alter his/her traffic pattern 80 degrees to make a short final approach.

**make-up air**

Air brought into a building from outdoors through the ventilation system and that has not been previously circulated through the system. *See also replacement air* (the two terms are synonymous).

**make up tow**

To assemble barges into a tow.

**malaise**

A general feeling of fatigue or exhaustion; a lack of energy and/or desire to do anything; can appear as a symptom of disease and illness.

**malaria**

A serious infectious illness characterized by periodic chills and high fever. It responds well to modern drugs but can be chronic. Malaria is primarily found in tropical and subtropical climates. Malaria is caused by a protozoan parasite, the Plasmodium, which is carried by the Anopheles mosquito. When the mosquito bites an infected person, it sucks in the parasites, which reside in the blood. In the mosquito, the plasmodia multiply and travel to the salivary glands from which they are transmitted to the human bloodstream by the mosquito bite. Inside the human host, they penetrate the erythrocytes where they

mature, reproduce, and at complete maturity, burst out of the blood cell. The life cycle varies according to the species of *Plasmodium*. There are usually no symptoms until several cycles have been completed. Then there is a simultaneous rupturing of cells by the entire blood supply, causing the characteristic chills followed in a few hours by fever. The temperature may rise to 104° or 105°F. As it subsides, there is profuse perspiring. Other symptoms are headache, nausea, body pains and, after the attack, exhaustion. The symptoms last from 4 to 6 hours and recur at regular intervals, depending upon the parasitic species and its cycle. If the attack occurs every other day, the disease is called tertian malaria; if it occurs at three-day intervals, it is quartan malaria. As the disease progresses, the attacks occur less frequently. Bouts of malaria last from 1 to 4 weeks but usually about 2 weeks. Relapses are common, with attacks ceasing and recurring at irregular intervals for several years, especially if untreated. Malaria is not usually fatal; when it is, it is almost always caused by the *falciparum* species.

**Malcolm Baldrige National Quality Award**

A nationally based award which is presented annually to an organization judged best in several categories such as human resource utilization, quality assurance, and leadership.

**malfeasance**

Evil doing, ill conduct, or the commission of some act which is positively unlawful. The doing of an act which is wholly unlawful and wrong.

**malic acid**

A crystalline acid from juices of many fruits and plants, and an intermediary product of carbohydrate metabolism in the body.

**malice**

The intentional doing of a wrongful act without just cause or excuse, with an intent to inflict an injury or under circumstances that the law will imply as evil intent.

**malicious injury**

An injury committed against a person at the prompting of malice or hatred toward that person, or done spitefully or wantonly.

**malignancy**

Cells having the ability to invade surrounding tissue and spread to distant sites (i.e., cancerous).

**malignant**

Pertaining to continuing abnormal tissue growth, possibly with eventual metastasis, culminating in death unless successfully treated.

**malignant granuloma**

*See Hodgkin's disease.*

**malignant tumor**

A tumor capable of metastasizing or spreading cancerous cells from one part of the body to another.

**malingering**

An individual who feigns illness or another problem to get out of work or responsibility.

**malleolus**

A rounded bony projection at the ankle.

**malnutrition**

A condition in which there is an inadequate nutritional intake or an inability to utilize ingested nutrients. Extreme malnutrition may lead to starvation.

**malodorant**

Any odorant having a strong or offensive odor.

**malpractice**

Misconduct or lack of proper professional skill on the part of a professionally trained person, such as an engineer, physician, dentist, attorney, or other professional in doing his or her work.

**malpractice insurance**

Type of liability insurance which protects professional people (e.g., lawyers, doctors, accountants) against claims of negligence brought against them. *See also insurance.*

**maltodextrin**

A complex carbohydrate that is commercially manufactured by the enzymatic treatment of corn.

**maltreatment**

In reference to the treatment of a patient by a surgeon, this term signifies improper or unskillful treatment. It may result either from ignorance, neglect, or willfulness, but the word does not necessarily imply that the con-

duct of the surgeon is either willfully or grossly careless.

**mammalian diving response**

A physiological response to high environmental pressure in which the peripheral arteries contract and the heart rate slows due to the body's attempt to preserve oxygen flow to the brain and other vital organs.

**mammatus clouds**

Clouds that look like pouches hanging from the underside of a cloud.

**mammography**

Roentgenography of the breast with or without injection of an opaque substance into its ducts. Simple mammography, without the use of a contrast medium, is sometimes used in the diagnosis of cancer and other disorders of the breast.

**man-amplifier**

The concept of a human using an exoskeleton or other device which enables him/her to perform feats requiring much greater strength or other capabilities than would be normally humanly possible without such a device.

**man-computer dialogue**

See *human-computer dialogue*.

**man-computer interaction**

See *human-computer interaction*.

**man-computer interface**

See *human-computer interface*.

**man-hour**

An industrial unit of production reflecting paid labor hours.

**man-machine chart**

A multiple activity process chart in which both personnel and machines are used.

**man-minute**

A unit of measure of work equivalent to the utilization, scheduling, or availability of one person working for one minute.

**man-multiplier**

A concept in which one person controls many machines, all performing the same tasks.

**man-paced work**

See *self-paced work*.

**man-tool interface**

Any portion of a tool where a person might grasp, carry, and/or hold a tool for performing manipulations on other objects.

**manage**

To organize and direct human, economic, and material resources toward developing and accomplishing one or more specified objectives.

**management**

The group of people within an organization who manage.

**management buy-in**

With regard to compliance, a declaration (often in the Compliance Procedures Manual) of the organization's commitment and support to the compliance program, both in words and resources, by those who control the organization. That support includes the implementation of a process to achieve compliance.

**management of migration**

Actions that are taken to minimize and mitigate the migration of hazardous substances or pollutants or contaminants and the effects of such migration. Measures may include, but are not limited to, management of a plume of contamination, restoration of a drinking water aquifer, or surface water restoration.

**mandamus**

A court order compelling a government agency to do a duty expressly provided in some statute or regulation. Also, the civil cause of action against an agency to seek to compel compliance, as in filing a complaint in the nature of mandamus.

**mandate**

A command, order, or direction, written or oral, which a court (or other regulatory body) is authorized to give and a person is bound to obey.

**mandatory altitude**

An altitude depicted on an instrument approach procedure chart requiring the aircraft to maintain altitude at the depicted value.

**mandatory standard**

A procedural, performance, or other type of standard which is regulated by law via one or more governmental agencies.

**mandatory statutes**

Generic term describing statutes which require and not merely permit a course of action. They are characterized by such directives as "shall" and not "should."



**mandatory use seat belt law**

A law requiring some adult occupants of some traffic vehicles to use available restraint systems. *See also manual restraint system, restraint usage.*

**mandible**

The lower, horseshoe-shaped jawbone of the skull. It consists of a central portion, which forms the chin and supports the lower teeth, and two perpendicular portions, or *rami*, which point upward from the back of the chin on either side. *See also jaw and jaw bone.*

**maneuver boat**

Boat used by the Corps of Engineers in raising and lowering movable wickets of dams on the Ohio River.

**maneuvering**

*Maritime Navigation.* Changing course, speed, or similar boat handling action during which a high degree of alertness is required or the boat is imperiled because of the operation, i.e., docking, mooring, undocking, etc.

**manganese**

A chemical element, atomic number 25, atomic weight 54.938, symbol Mn.

**mania**

A disordered mental state of extreme excitement.

**manic-depressive**

A psychosis marked by alternating periods of elation and depression.

**manifest**

(1) *Human Perception.* Something that becomes evident to the senses, especially to sight. Obvious to the understanding, evident to the mind, not obscure or hidden, and is synonymous with open, clear, and self-evident. (2) *Shipping-General.* A document used in shipping and warehousing containing a list of the contents, value, origin, carrier, and destination of the goods to be shipped or warehoused. (3) *Shipping-EPA.* The uniform shipping document required by the EPA and established as a tracking mechanism by the Resource Conservation and Recovery Act (RCRA). This tracking document follows the hazardous waste from point of generation to its final destination. Copies are maintained by the state where the wastes are generated, the destination state, the transporting company, and

by the generator. Proper DOT shipping names, EPA waste codes and other specific information are required. The manifest certifies everything has been done within the generators power to reduce the volume and/or toxicity of its hazardous wastes. (4) *Law.* In evidence, that which is clear and requires no proof.

**manifold pressure**

Absolute pressure as measured at the appropriate point in the induction system and usually expressed in inches of mercury.

**manipulate**

To handle, move, or operate on one or more objects or controls using the hands or other dexterous controlling device(s) in conjunction with a vision or other sensory system.

**manipulation**

Skillful or dexterous treatment by the hands. In physical therapy, the forceful passive movement of a joint beyond its active limit of motion.

**manipulative dexterity**

A measure of the skill which an individual or robotic device possesses for the coordinated use of fingers/hands/wrists or their robotic analogies for fine tasks.

**manipulator**

Any non-mobile mechanical device for handling, moving, or controlling operations at a distance.

**manmade air pollution**

Air pollution which results directly or indirectly from human activities.

**manmade fiber**

Any textile fiber made from synthetic or natural chemical substances.

**manmade ionizing radiation**

Ionizing radiation produced by a manmade source, such as an x-ray machine.

**manmade mineral fiber (MMMF)**

A fibrous material that is manmade as opposed to a naturally occurring fibrous material like asbestos. Manmade mineral fibers are used as substitutes for asbestos-containing materials. They include fibrous glass, mineral wool, refractory ceramic fibers, etc.

**manmade noise**

Any electrical or acoustic noise having a human source or resulting from manmade equipment.

**manmade vitreous fiber (MMVF)**

Fibrous, amorphous, inorganic substances that are made primarily from rock, clay, slag, or sand. They include fibrous glass, mineral wool (rock and slag), and refractory ceramic fibers.

**Mann-Whitney U test**

A nonparametric statistical test using rank-ordered data for comparing two independent groups.

**mannequin**

An anthropomorphic figure which has joints or other superficial human physical characteristics and which is used in modeling, clothing, display, training, or art.

**manner of collision**

A classification for crashes in which the first harmful event was a collision between two motor vehicles in transport.

**manometer**

Instrument for measuring the pressure of any fluid or the difference in the pressure between fluids, whether liquid or gas.

**manoptoscope**

A device for determining which eye is dominant.

**MANOVA**

See *multivariate analysis of variance*.

**Manpower and Personnel Integration (MAN-PRINT)**

A U.S. Army management and technical human factors program for improving weapon-soldier system performance.

**manslaughter**

The unjustifiable, inexcusable, and intentional killing of a human being without deliberation, premeditation, and malice. Criminal homicide constitutes manslaughter when a) it is committed recklessly, or b) a homicide which would otherwise be murder is committed under the influence of extreme mental or emotional disturbance for which there is reasonable explanation or excuse.

**Mansonia**

A genus of mosquitoes comprising some 55 species, distributed primarily in tropical regions, important as vectors of microfilariae and viruses.

**manual**

(1) Pertaining to an operation or set of operations performed solely by humans, rather than by machines or with machine assistance. (2) A document which provides instructions or other information for operation of some equipment.

**manual control**

(1) Any control mechanism intended for manipulation by humans. The individual is the feedback element. (2) A discipline which studies and incorporates the human operator as a feedback element within a closed-loop system.

**manual dexterity**

A measure of the ability to make rapid, coordinated, fine, or gross movements of the fingers, hand(s), and/or arm(s) for handling independent objects.

**manual element**

A work element performed by a worker using no more than simple tools, and not involving machines.

**manual input**

The use of a human operator to input data to a computer via some computer input device.

**manual interlocking**

*Rail Operations.* An arrangement of signals and signal appliances operated from an interlocking machine and so interconnected by means of mechanical and/or electric locking that their movements must succeed each other in proper sequential, train movements over all routes being governed by signal indication.

**manual labor**

Literally, work done with the hands. Generally, it refers to labor performed by hand or by the exercise of physical force, with or without the aid of tools, machinery, or equipment, but depending for its effectiveness chiefly upon personal muscular exertion rather than upon skill, intelligence, or adroitness.

**manual materials handling (MMH)**

The non-equipment-aided human act of relocating an object, consisting of approximately the following stages: approach, grasp, pickup, move or carry, putdown, adjust.

**manual rating insurance**

Type of insurance in which the premium is set from a manual classifying types of risk on a

general basis such as a particular industry without reference to the individual case. *See also insurance.*

**manual restraint system**

Occupant restraints that require some action, usually buckling, before they are effective. They include shoulder belt, lap belt, lap and shoulder belt, infant carrier, or child safety seat. *See also mandatory use seat belt law, restraint usage.*

**manual steadiness**

*See hand steadiness.*

**manual time**

The amount of time required to execute a manual element.

**manually propelled mobile scaffold**

A portable rolling scaffold support by casters.

**manubrium**

The triangular-shaped superior segment of the sternum.

**manufacture**

(1) *General.* The process of making products by hand, machinery, or other automated means. (2) *TSCA.* To import into the customs territory of the United States or to produce or manufacture chemical substances. (3) *EP-CRA.* To produce, prepare, import, or compound a toxic chemical. Manufacture also applies to a toxic chemical that is produced coincidentally during the manufacture, processing, use, or disposal of another chemical or mixture of chemicals, including a toxic chemical that is separated from that other chemical or mixture of chemicals as a by-product, and a toxic chemical that remains in that other chemical or mixture of chemicals as an impurity.

**manufacturer**

(1) *General.* One who by labor, art, or skill transforms raw material into some kind of a finished product or article of trade. (2) *U.S. Coast Guard.* a) Any person engaged in the manufacture, construction, or assembly of boats or associated equipment. b) The manufacture or construction of components for boats and associated equipment. c) Equipment to be sold for subsequent assembly. d) The importation into the United States for sale of boats, associated equipment, or components thereof.

**manufacturer identification code (MIC)**

*U.S. Coast Guard.* Three-character identifier assigned by Coast Guard Headquarters on request to those manufacturers and importers defined under 33 CFR 181.31.

**manufacturer's formulation**

A list of substances or component parts as described by the maker of a coating or pesticide.

**Manufacturing Automation Protocol (MAP)**

A set of communication standards for use in automated manufacturing.

**manufacturing cost**

The total cost of manufacturing an item, including materials, direct labor, overhead, and depreciation.

**manufacturing engineering**

That field of engineering specializing in the research, planning, design, integration, and development of the methods, facilities, tools, and processes involved in the production of goods.

**manufacturing progress function**

The improvement in production efficiency with time.

**manometer**

A spring device for measuring static strength of the finger flexor muscles.

**map**

A drawing used to illustrate the physical relationships between the elements of people, equipment, materials, and environmental structures associated with an accident or incident.

**MAP**

*See Model Accreditation Plan. See also Manufacturing Automation Protocol. See also Michigan Anthropometric Processor.*

**MARAD**

*See Maritime Administration.*

**margin**

(1) A distance, setting, or other limit which should not be exceeded under normal circumstances. (2) That region, typically without printing, which separates printed text and/or graphics from the paper or other material edge on a hardcopy.

**margin of safety**

The percentage by which the allowable load (stress) exceeds the limit load (stress) for specific design conditions, represented as follows:

*Margin of Safety* =

$$\left[ \left( \frac{\text{Yield Strength}}{\text{Limit Load Stress}} \right) \times \left( \text{Yield Factor of Safety} \right) \right] - 1$$

or:

*Ultimate Margin of Safety* =

$$\left[ \left( \frac{\text{Ultimate Strength}}{\text{Limit Load Strength}} \right) \times \left( \text{Ultimate Factor of Safety} \right) \right] - 1$$

**marginal cost**

That cost incurred for an additional unit of output.

**marginal event**

An occurrence, subsequent to the introduction of a hazard or set of hazards into a system, that results in a level of injury, damage, or loss of minimal consequences. Quick recovery would be possible and probable. The parameters for this categorization are usually established by management in the System Safety Program Plan, or other policy-making documentation.

**marginal product**

That additional unit of output which is obtained by adding an extra unit of some factor.

**marginal revenue**

That additional income realized by selling one additional product unit.

**Marie-Tooth disease**

Progressive neuropathic (peroneal) muscular atrophy.

**marihuana**

An annual herb, *cannabis sativa*, having angular rough stem and deeply lobed leaves. The bast fibers of cannabis are the hemp of commerce. A drug prepared from *cannabis sativa*, designated in technical dictionaries as cannabis and commonly known as *marijuana*, *marajuana*, or *maraguana*. Marihuana means all parts of the plant *cannabis sativa* L, whether growing or not, the seeds thereof, the resin extracted from any part of the plant; and every compound, manufacture, salt, derivative, mixture, or preparation of the plant, its

seeds, or its resin. It does not include the mature stalks of the plant, fiber produced from the stalks, oil, or cake made from the seeds of the plant, any other compound, manufacture, salt, derivative, mixture, or preparation of the mature stalks (except the resin extracted therefrom), or sterilized seed of the plant which is incapable of germination. Marihuana is also commonly referred to as *pot*, *grass*, *tea*, *weed*, or *Mary-Jane*; and in cigarette form as a *joint* or *reefer*.

**marina**

Establishments primarily engaged in operating marinas. These establishments rent boat slips and store boats, and generally perform a range of other services including cleaning and incidental boat repair. They frequently sell food, fuel, and fishing supplies, and may sell boats. *See also dock, pier, harbor, and wharf.*

**marine cargo handling**

Establishments primarily engaged in activities directly related to marine cargo handling from the time cargo, for or from a vessel, arrives at ship side, dock, pier, terminal, staging area, or in-transit area until cargo loading or unloading operations are completed. Included in this industry are establishments primarily engaged in the transfer of cargo between ships and barges, trucks, trains, pipelines, and wharves. Cargo handling operations carried on by transportation companies and separately reported are classified here. This industry includes the operation and maintenance of piers, docks, and associated buildings and facilities.

**marine insurance**

A contract whereby one party, for a stipulated premium, undertakes to indemnify the other against certain perils or sea risks to which his/her ship, freight, and cargo, or some of them, may be exposed during a certain voyage, or a fixed period of time. An insurance against risks connected with navigation, to which a ship, cargo, freightage, profits, or other insurable interest in movable property may be exposed during a certain voyage or a fixed period of time. *See also insurance.*

**marine mammal**

According to the Federal Marine Mammal Protection Act of 1972: Any mammal which is morphologically adapted to the marine environment (including sea otters and members

of the orders *Sirenia*, *Pinnipedia* and *Cetacea*), or primarily inhabits the marine environment (such as a polar bear).

**marine mammal product**

According to the Federal Marine Mammal Protection Act of 1972: Any item of merchandise which consists, or is composed in whole or in part, of any marine mammal.

**marine pollutant**

A hazardous material which is listed in Appendix B to CFR 172.101 and, when in a solution or mixture of one or more marine pollutants, is packaged in a concentration which equals or exceeds a) ten percent by weight of the solution or mixture for materials listed in the appendix; or b) one percent by weight of the solution or mixture for materials that are identified as severe marine pollutants in the appendix. *See also hazardous material.*

**marine sanitation device**

Any equipment or device installed on board a vessel to receive, retain, treat, or discharge sewage and any process to treat such sewage.

**marine terminal**

A designated area of a port, which includes but is not limited to wharves, warehouses, covered and/or open storage spaces, cold storage plants, grain elevators and/or bulk cargo loading and/or unloading structures, landings, and receiving stations, used for the transmission, care, and convenience of cargo and/or passengers in the interchange of same between land and water carriers or between two water carriers.

**marine terminal operator**

Person or entity that operates the various marine terminals at ports, usually under long-term lease agreements with local or state governments or port authorities. The marine terminal operator provides receiving and delivery, and other terminal services for the cargo moving through these facilities.

**maritime**

Business pertaining to commerce or navigation transacted upon the sea or in seaports in such matters as the court of admiralty has jurisdiction.

**Maritime Administration (MARAD)**

The Maritime Administration was established by Reorganization Plan No. 21 of 1950 (5 U.S.C. app.) effective May 24, 1950. The Maritime

Act of 1981 (46 U.S.C. 1601) transferred the Maritime Administration to the Department of Transportation, effective August 6, 1981. The Administration administers programs to aid in the development, promotion, and operation of the U.S. Merchant Marine. It is also charged with organizing and directing emergency merchant ship operations. It administers subsidy programs, provides financing guarantees for the construction, reconstruction, and reconditioning of ships; and enters into capital construction fund agreements that grant tax deferrals on monies to be used for the acquisition, construction, or reconstruction of ships. The Administration constructs or supervises the construction of merchant type ships for the Federal Government, helps industry generate increased business for U.S. ships, and conducts programs to develop ports, facilities, and intermodal transport, and to promote domestic shipping. The Administration conducts program and technical studies and administers a War Risk Insurance Program, and under emergency conditions the Maritime Administration charters government-owned ships to U.S. operators, requisitions or procures ships owned by U.S. citizens, and allocates them to meet defense needs. It maintains a National Defense Reserve Fleet of government-owned ships, regulates sales to aliens and transfers to foreign registry of ships that are fully or partially owned by U.S. citizens. It also operates the U.S. Merchant Marine Academy, Kings Point.

**maritime air**

Moist air whose characteristics were developed over an extensive body of water.

**maritime carrier**

Carriers which operate on the open sea, i.e., their operations must include a foreign or international component and may include a domestic component.

**Maritime Commission**

The Federal Maritime Commission regulates the waterborne foreign and domestic offshore commerce of the United States, assures that the United States international trade is open to all nations on fair and equitable terms, and guards against unauthorized monopolies in the waterborne commerce of the United States. This is accomplished through maintaining surveillance over steamship confer-

ences and common carriers by water; assuring that only the rates on file with the Commission are charged; approving agreements between persons subject to the Shipping Acts of 1916 and 1984; guaranteeing equal treatment to shippers and carriers by terminal operators, freight forwarders, and other persons subject to the shipping statutes; and ensuring that adequate levels of financial responsibility are maintained for the indemnification of passengers or oil spill cleanup.

**maritime revenue**

Revenue received for operations in international or foreign shipping.

**maritime tort**

Civil wrongs committed on navigable water.

**Mark Twain**

*Maritime Navigation (slang).* Colloquial term for 12-foot depth or mark 2 on the lead line.

**marked channel**

A channel marked by buoys.

**marker**

To monitor for a unique component of a mixture and use its result as an indicator of the presence of the mixture.

**marker beacon**

*Aviation.* An electronic navigation facility transmitting a 76-mHz vertical fan or bone-shaped radiation pattern. Marker beacons are identified by their modulation frequency and keying code, and when received by compatible airborne equipment, indicate to the pilot, both aurally and visually, that he is passing over the facility.

**market analysis**

A study involving the collection of data to determine information for a product or service such as the identification of potential customers, trends in the marketplace, why a consumer might purchase it, etc.

**market research**

The process of gathering and analyzing data regarding the potential sale of goods or services to a consumer.

**marketable title**

A title which is free from encumbrances and any reasonable doubt as to its validity, and such as a reasonably intelligent person, who is well-informed as to the facts and their legal

bearings, and ready and willing to perform his/her contract, would be willing to accept in exercise of ordinary business prudence.

**marketed production**

Gross withdrawals less gas used for repressurization, quantities vented and flared, and nonhydrocarbon gases removed in treating or processing operations. Includes all quantities of gas used in field and processing operations.

**marketing policy**

That guideline which determines what products will be offered, what types of markets will be approached, what selling and promotional techniques will be used, what process will be charged, etc.

**marking**

A descriptive name, identification number, instruction, caution, weight, specification, or combinations thereof, on outer packagings of hazardous materials.

**marrow**

A soft tissue material in the interior of many bones. Bone marrow is a network of blood vessels and special connective tissue fibers that hold together a composite of fat and blood-producing cells. The chief function of marrow is to manufacture erythrocytes, leukocytes, and platelets. These blood cells normally do not enter the bloodstream until they are fully developed, so that the marrow contains cells in all stages of growth. If the body's demand for white blood cells is increased because of infection, the marrow responds immediately by stepping up production. The same is true if more red blood cells are needed, as in hemorrhage or some other types of anemia. There are two types of marrow: red and yellow. Red marrow produces blood cells while yellow marrow, which is mainly composed of fatty tissue, normally has no blood-producing function. During infancy and early childhood, most bone marrow is red. But gradually, as one gets older and less blood-cell production is needed, the fat content of the marrow increases to turn some of the marrow from red to yellow. Red marrow continues to be present in adulthood only in the flat bones of the skull, the sternum, ribs, vertebral column, clavicle, humerus, and part of the femur. However, under certain conditions, as after hemorrhage, yellow marrow in other bones may again be converted to red



and resume its cell-producing functions. The marrow is occasionally subject to disease, as in aplastic anemia, which may be caused by destruction of the marrow by chemical agents or excessive x-ray exposure. Other diseases that affect the bone marrow are leukemia, pernicious anemia, myeloma, and metastatic tumors.

**marsh**

A type of wetland that does not accumulate appreciable peat deposits and is dominated by herbaceous vegetation. Marshes may be either fresh or saltwater and tidal or non-tidal. *See also wetlands.*

**marshal**

The President is required to appoint a U.S. marshal to each judicial district. It is the responsibility of U.S. marshals to execute all lawful writs, processes and orders issued under authority of the United States. In executing the laws of the United States within a state, the marshal may exercise the same powers which a sheriff of the state may exercise in executing the laws thereof.

**marstochron**

*See chronograph.*

**marstograph**

*See chronograph.*

**Martin's diameter**

Length of the line which divides a particle into two equal areas.

**maser**

Acronym for *microwave amplification by stimulated emission of radiation*. A device that produces an extremely intense, small, and nearly nondivergent beam of monochromatic radiation in the microwave region, with all the waves in phase.

**mask**

(1) To cover or conceal. (2) In audiometry, to obscure or diminish a sound by the presence of another sound of different frequency. (3) An appliance for shading, protecting, or medicating the face. (4) To increase the threshold level of a stimulus or condition by presenting a second (masking) stimulus simultaneously or in close time or space proximity.

**masking**

In acoustics, a process by which the threshold

of audibility for one sound is raised by the presence of another (masking) sound.

**masking level**

The difference in original stimulus intensity required to reach a reported threshold due to a masking stimulus.

**mason's adjustable multiple-point suspension scaffold**

A scaffold having a continuous platform supported by bearers suspended by wire rope from overhead supports, so arranged and operated as to permit the raising or lowering of the platform to desired working positions.

**mass**

(1) *General*. The fundamental measure of the quantity of matter. Mass is different from weight in that it does not depend upon gravitational force. (2) *Physics*. The measure of a body's resistance to acceleration. The mass of any object is different than, but proportional to, its weight which is the force of attraction that exists between the object being considered and any other proximate massive object (i.e., the earth). In the International System of Units, the basic unit of mass is the *kilogram*, which has been defined as being equal to the mass of the international prototype of the kilogram. In the MKS System, the basic unit of mass is the *kilogram*. In the CGS System, the basic unit of mass is the *gram*. In the English System, the basic unit of mass is the *slug*. (3) A lump or collection of cohering particles.

**mass flow meter**

An electrically heated tube and an arrangement of thermocouples to measure the differential cooling caused by a gas (e.g., air) passing through the tube. The thermoelectric elements generate a voltage proportional to the rate of gas flow through the tube.

**mass media**

Those forms of the media which typically reach large numbers of people, especially newspapers, television, and radio.

**mass median aerodynamic diameter (mmad)**

The mass median diameter of spherical particles of unit density which have the same falling velocity in air as the particle in question.

**mass median size**

The mass median size of a particle in a distribution of particles such that the mass of all

particles larger than the median is equal to the mass of all smaller particles.

**mass number**

The number of protons and neutrons in the nucleus of an atom. *See also* **atomic weight**.

**mass psychogenic illness (MPI)**

Term used in describing illnesses experienced by workers and for which no definitive cause/source can be identified. Often, it is more commonly referred to as the "I'm sick, you're sick syndrome."

**mass spectrography**

An instrumental analytical method for identifying substances from their mass spectra.

**mass spectrometer**

An electronic instrument used for the separation of electrically charged particles by mass.

**mass transit**

Another name for public transportation.

**mass transportation**

Another name for public transportation.

**Mass Transportation Agency**

An agency authorized to transport people by bus, rail, or other conveyance, either publicly or privately owned, and providing to the public general or special service (but not including school, charter, or sightseeing service) on a regular basis.

**massage**

To rub, stroke, knead, or impact the superficial muscles of the body, either by hand or with some instrument for therapeutic or other purposes.

**massed practice**

Continuous, repeated, or extended training, without time for rest periods.

**masseter muscle**

The muscle that closes the jaws.

**mast cell**

A connective tissue cell whose specific physiological function is unknown. It elaborates granules that contain histamine, heparin, and, in the rat and mouse, serotonin.

**mastectomy**

Surgical removal of breast tissue. Mastectomy is usually performed to treat malignant breast tumors, although rarely it may be advisable to use the procedure for benign tumors

and for other diseases of the breast, such as chronic cystic mastitis. *See also* **mastitis**.

**master agreement**

The omnibus labor agreement reached between a union and the leaders of the industry or trade association. It becomes the pattern for labor agreements between the union and individual employers.

**master plan**

Term used in land use control law, zoning, and urban redevelopment to describe the omnibus plan of a city or town for housing, industry, recreational facilities, and their impact on environmental factors.

**master-servant rule**

Under this rule of law, the master (employer) is liable for the conduct of the servant (employee) which occurs while the servant is acting within the scope of his/her employment or within the scope of his/her authority.

**master-slave manipulator**

Pertaining to any device in which the remote operator is intended to follow either exactly or proportionately the motions and forces of the input controller.

**Master Standard Data (MSD)**

A universal predetermined motion time system.

**Master's two-step test**

The simple exercise of repeatedly ascending over two nine-inch steps to test cardiovascular function.

**mastitis**

Inflammation of the breast, occurring in a variety of forms and in varying degrees of severity. Chronic cystic mastitis is the most common disorder of the breast resulting from hormonal imbalance. This condition generally occurs in women between the ages of 30 and 50. It is probably related to the activity of the ovaries and is rare after menopause. The disease is characterized by the formation of cysts which give a lumpy appearance to the breast. Symptoms may include pain and tenderness, which are usually aggravated before the menstrual period, at which time the cysts tend to enlarge. There may also be discharge from the nipple. Periodic change in the size of a lump or its rapid appearance and disappearance is common in cystic mastitis. Since

there are times when it is difficult to distinguish this condition from cancer of the breast, biopsy may be necessary. Treatment may involve removing fluid from the cysts.

**mastoid**

(1) Nipple shaped. (2) The portion of the temporal bone lying behind the meatus of the ear (pars mastoidea), or more specifically, the conical projection from it (mastoid process). See also *mastoid process*.

**mastoid process**

The bony projection on the inferior lateral surface of the temporal bone.

**mastoiditis**

Inflammation of the mastoid antrum and cells, usually the result of an infection of the middle ear with which the mastoid cells communicate. Mastoiditis most commonly follows sore throat and respiratory infection, but it can also be caused by such diseases as diphtheria, measles, and scarlet fever. Symptoms include earache and a ringing in the ears. The mastoid process may become painful and swollen.

**MATC**

See *maximum acceptable toxicant concentration*.

**matched groups design**

An experimental design in which group selection is made by matching individuals across those groups based on one or more variables which are to be manipulated or controlled during the experiment. Also referred to as *equivalent groups method*.

**matched pairs design**

An experimental methodology in which assignment to groups is not strictly random, but based on one or more pairing criteria on which individuals are paired.

**matching**

Comparison for the purpose of selecting objects having similar or identical characteristics.

**matching individual**

An individual acting as a control for another individual in a matched pair.

**material damping**

Sound attenuation due to energy loss in the substance through which the energy is being transmitted.

**material evidence**

That quality of evidence which tends to influence the trier of fact because of its logical connection with the issue.

**material handling**

Short-distance movement of goods within a storage area.

**material handling equipment (MHE)**

A broad term used to delineate any equipment used to handle, lift, support, or manipulate hardware, materials, or other such equipment. MHE includes, but is not limited to, cranes, hoists, sling assemblies, load cells, forklifts, handling structures, and personnel work platforms.

**material requirements planning (MRP)**

The process of reducing each final product to its elementary parts, forecasting the product output required, and coordinating the production quantities of elementary parts.

**material safety data sheet (MSDS)**

A compilation of data required under OSHA's Hazard Communication Standard on the identity of hazardous chemicals, their health and physical hazards, exposure limits, and precautions. Section 311 of SARA requires facilities covered by the OSHA standard to submit MSDSs under certain circumstances.

**material-type flow process chart**

A flow process chart which indicates material usage.

**material witness**

A person who can give testimony relating to a particular matter no one else, or at least very few, can give. In an important criminal case, a material witness may sometimes be held by the government against his or her will. This witness may be the victim or an eyewitness.

**maternity leave**

That leave of absence, granted either with or without pay, for a female employee to give birth to a child and recover before returning to work.

**mathematical reasoning**

The ability to understand and organize a mathematical problem, then select a method to find a solution to the problem. Excludes the actual numerical manipulation.

**matrix**

(1) A rectangular array of numbers with a designated rows-by-columns structure. (2) A generative, or basic, structure from which a tissue or organ develops, such as the organs from which the hair and nail grow.

**matrix spikes**

Duplicate field samples that are spiked in the laboratory with measured quantities of contaminant; the volume of contamination in a matrix spike can be subtracted from the overall quantity of contaminant in the pure sample to determine the contamination level in the original soil sample.

**matte**

Having or pertaining to a surface with a dull appearance, exhibiting primarily or only diffuse reflections.

**matter**

(1) Anything that has mass or occupies space. (2) Physical material having form and weight under ordinary conditions of gravity.

**matter of law**

Whatever is to be ascertained or decided by the application of statutory rules or the principles and determinations of the law, as distinguished from the investigation of particular facts.

**mature thunderstorm**

The second stage in the three-stage cycle of an air mass thunderstorm. This stage is characterized by heavy showers, lightning, thunder, and violent vertical motions inside cumulonimbus clouds.

**MAWP**

Maximum allowable working pressure.

**maxi-cube vehicle**

A combination vehicle consisting of a power unit and a trailing unit, both of which are designed to carry cargo. The power unit is a non-articulated truck with one or more drive axles that carries either a detachable or a permanently attached cargo box. The trailing unit is a trailer or semitrailer with a cargo box so designed that the power unit may be loaded and unloaded through the trailing unit.

**maxilla**

A bilaterally fused bone making up much of the anterior portion of the face, including the upper part of the mouth/jaw, part of the nasal

cavities, and the floor of the orbits. *See also jaw.*

**maximal aerobic capacity**

The level at which oxygen uptake during performance of a task reaches a steady state and no additional oxygen can be used by the muscles involved in the task. Also referred to as *aerobic capacity, aerobic endurance capacity, aerobic work capacity, maximal oxygen uptake/consumption, maximal aerobic power, maximum aerobic work capacity, and maximum oxygen uptake.*

**maximal aerobic power**

*See maximal aerobic capacity.*

**maximal isometric force**

The maximum force generated during an isometric contraction for a specified muscle or muscle group.

**maximal oxygen uptake/consumption**

*See maximal aerobic capacity.*

**maximal voluntary contraction (MVC)**

The greatest force which a muscle or muscle groups involved can develop under voluntary control when contracting against a resistance under specified conditions.

**maximally exposed individual**

The individual with the highest exposure in a given population.

**maximum**

The largest measured, existing, or permissible value of a set.

**maximum acceptable toxicant concentration (MATC)**

The geometric mean of the highest tested concentration which did not cause the occurrence of a specified adverse effect and the lowest concentration which did cause the specified adverse effect.

**maximum achievable control technology (MACT)**

The level of air pollution control technology required by the Clean Air Act.

**maximum aerobic work capacity**

*See maximal aerobic capacity.*

**maximum allowable flight duty period**

The greatest number of hours an air crew can fly in an aircraft in any 24-hour period.

**maximum allowable slope**

That ratio of the horizontal distance from the edge of an excavation to the depth which must be provided for the existing soil or rock conditions.

**maximum breathing capacity**

See *maximum voluntary ventilation*.

**maximum contaminant level (MCL)**

The maximum permissible level of a contaminant in water delivered to any user of a public water system. MCLs are enforceable standards.

**maximum contaminant level goal (MCLG)**

Under the Federal Safe Drinking Water Act, as amended, a non-enforceable concentration for a substance in drinking water that is protective of adverse human health effects and allows for an adequate margin of safety.

**maximum design pressure (MDP)**

See *maximum expected operating pressure (MEOP)*.

**maximum detection limit (MDL)**

The lowest concentration of analyte that a method can detect reliably in either a sample or a blank.

**maximum evaporative capacity**

The maximum amount of sweat that can be evaporated from the body's surface under the environmental conditions that exist. The evaporation of sweat is limited by the moisture content of the air.

**maximum expected operating pressure (MEOP)**

The highest pressure that a pressure vessel, pressurized structure, or pressure component is expected to experience during its service life and retain its functionality, in association with its applicable operating environments. It includes the effect of temperature, pressure transients and oscillations, vehicle quasi-steady and dynamic accelerations and relief valve operating variability. Synonymous with *maximum operating pressure (MOP)* or *maximum design pressure (MDP)*.

**maximum extent practicable**

The limits of available technology and the practical and technical limits on a pipeline operator in planning the response resources required to provide the on-water recovery capa-

bility and the shoreline protection and cleanup capability to conduct response activities for a worst case discharge from a pipeline in adverse weather.

**maximum high water elevation**

The highest water level reached during the past 200 years of recordkeeping.

**maximum intended load**

In scaffolding, the total of all loads including the working load, the weight of the scaffold, and such other loads as may be reasonably anticipated.

**maximum metabolic rate**

The highest metabolic rate consistent with sustained aerobic metabolism.

**maximum operating pressure (MOP)**

The maximum operating pressure a system will be subjected to during planned static and dynamic conditions. See also *maximum expected operating pressure (MEOP)*.

**maximum oxygen uptake**

See *maximal aerobic capacity*.

**maximum performance**

The performance level which results in the highest possible production.

**maximum permissible concentration (MPC)**

The amount of radioactive material that can be tolerated in the environment or in the body without producing a significant injury. It is the recommended maximum average concentration of radionuclides in air or water to which a person (radiation worker or member of the general public) may be exposed, assuming 40 hours per week exposure for the worker and 168 hours per week for the public. It is the amount of radiation per unit volume of air or water which, if inhaled or ingested over a period of time, would result in a body burden that is believed will not produce significant injury.

**maximum permissible dose (MPD)**

That amount of ionizing radiation which can be absorbed per unit mass of irradiated material at a specific location without being expected to cause radiation injury to a person during one's lifetime.

**maximum permissible exposure (MPE)**

See *maximum permissible dose and radiation protection guide*.

**maximum permissible lift (MPL)**

Three times the acceptable lift in kilograms or pounds.

**maximum permissible limit (MPL)**

A NIOSH guideline for manual lifting under specified conditions, above which musculoskeletal injury is a high probability.

**maximum sound level**

The greatest A-weighted sound level in decibels measured during the designated time interval or during the event, with either fast meter response or slow meter response. It is abbreviated as  $L_{\max}$ .

**maximum use concentration (MUC)**

In radiation protection, the maximum concentration that can exist for which a specific type of respiratory protection can be used. It is equal to the permissible exposure limit for the substance to which exposure occurs times the assigned protection factor.

**maximum voluntary ventilation**

The volume of air breathed with maximum voluntary effort by an individual for a given period of time, usually 10-15 seconds, corrected to one minute. Also known as *maximum breathing capacity*.

**maximum working area**

That portion of the working surface which is easily accessible to the operator's hands with the elbow and shoulder fully extended in the normal working posture.

**maximum working volume**

That maximal region within which an operator can be expected to reach via any combination of shoulder, elbow, and wrist motions.

**Maxwell**

A unit of magnetic flux in the meter-kilogram-second electromagnetic system.

**may**

If a discretionary right, privilege, or power is abridged or if an obligation to abstain from acting is imposed, the word "may" is used with a restrictive "no," "not," or "only" (for example, no employer may...; an employer may not...; only qualified persons may...).

**May Day**

The international radiotelephony distress signal. When repeated three times, it indicates

imminent and grave danger and that immediate assistance is requested. *See also Pan Pan.*

**Maynard Operation Sequence Technique (MOST)**

A predetermined motion time system.

**Mb**

Megabyte, or one million bytes.

**MBO**

Management by Objective. An approach to organizational management characterized by the establishment of specific objectives or goals and requirements for every element of the organizational structure to work toward the achievement of that goal(s). While each element cannot possibly be responsible for the accomplishment of these objectives individually, it is their collective contributions that allow the organization to achieve its goals.

**MCA**

Manufacturing Chemists Association.

**MCC**

*See maintenance control center.*

**MCH**

*See mean corpuscular hemoglobin.*

**MCHC**

*See mean corpuscular hemoglobin concentration.*

**mCi**

Millicurie(s).

**MCL**

*See maximum containment level. See also middle compass locator.*

**MCLG**

*See maximum contaminant level goal.*

**MCS**

Multiple Chemical Sensitivity.

**MCV**

(1) *See mean corpuscular volume.* (2) *See mean clinical value.*

**MDA**

*See minimum descent altitude.*

**MDC**

Mild detonating cord.

**MDF**

Mild detonating fuse.

**MDL**

*See maximum detection limit.*



**MDP**

Maximum design pressure. See *maximum expected operating pressure (MEOP)*.

**MEA**

See *minimum en route altitude*.

**meal break**

That segment of the work shift, typically about mid-shift, which an employee is allotted for eating a meal. May be compensable or not, depending on whether primarily for the benefit of the employer or the employee.

**mean**

In statistical analysis, the arithmetic average derived from the addition of all value points in the sample, divided by the total number of points in the sample. See also *estimate ratio* and *ratio estimate*.

**mean annual temperature**

The average temperature at any given location for the entire year.

**mean body temperature**

An estimated value of the average body temperature based on skin and core temperature measurements, usually as a function of the weighted mean skin temperature and the rectal temperature.

**mean clinical value (MCV)**

Obtained by assigning a numerical value to the response noted in a number of patients receiving a specific treatment, adding these numbers, and dividing by the number of patients treated.

**mean corpuscular hemoglobin (MCH)**

An expression of the average hemoglobin content of a single cell in micromicrograms, obtained by multiplying the hemoglobin in grams by 10 and dividing by the number of erythrocytes (in millions).

**mean corpuscular hemoglobin concentration (MCHC)**

An expression of the average hemoglobin concentration in percent, obtained by multiplying the hemoglobin in grams by 100 and dividing by the hematocrit determination.

**mean corpuscular volume (MCV)**

An expression of the average volume of individual cells in cubic microns, obtained by multiplying the hematocrit determination by

10 and dividing by the number of erythrocytes (in millions).

**mean deviation**

The average of the absolute deviations of values in a distribution from the mean.

**mean radiant temperature**

The temperature of a black body which would exchange the same amount of radiant heat as a worker would at the same location in a hot environment.

**mean skin temperature**

A measure intended to represent the average temperature of the skin over its total body surface.

**mean time between failures (MTBF)**

The average time expected between failures of a system or piece of equipment.

**mean time to failure (MTTF)**

The average time to the first failure of a component or system.

**means of egress**

A continuous and unobstructed way of exit travel from any point in a building or structure to a public way and consisting of three separate and distinct parts: the way of exit access, the exit, and the way of exit discharge. A means of egress comprises the vertical and horizontal ways of travel and shall include intervening room spaces, doorways, hallways, corridors, passageways, balconies, ramps, stairs, enclosures, lobbies, escalators, horizontal exits, courts, and yards.

**means of transportation**

A mode used for going from one place (origin) to another (destination). Includes private and public modes, as well as walking. For all travel day trips, each change of mode constitutes a separate trip. See also *mode*.

**measles**

Also called *rubeola* (differentiated from *rubeola*, or German measles). A highly contagious illness caused by a virus. Measles is a childhood disease but it can be contracted at any age. Epidemics of measles usually recur every 2 or 3 years and are most common in the winter and spring. The virus that causes measles is spread by droplet infection. The virus can also be picked up by touching an article, such as a handkerchief, that an infected person has recently used. The incuba-

tion period is usually 11 days, although it may be as few as 9 or as many as 14. The infected person can transmit the disease from 3 or 4 days before the rash appears until the rash begins to fade, a total of about 7 or 8 days. One attack of the measles usually provides a lifetime of immunity to rubeola, but not to German measles (rubella), which is somewhat similar to ordinary measles. Symptoms generally appear in two stages. In the first stage the patient feels tired and uncomfortable, and may have a running nose, a cough, a slight fever, and pains in the head and back. The eyes may become reddened and sensitive to light. The fever rises a little each day. The second stage begins at the end of the third or beginning of the fourth day. The person's temperature is generally between 103° and 104°F. Koplik's spots, small white dots like grains of salt surrounded by inflamed areas, can often be seen on the gums and the inside of the cheeks. A rash appears starting at the hairline and behind the ears and spreading downward, covering the body in about 36 hours. At first the rash appears as separate pink spots, about a quarter of an inch in diameter, but later some of these spots may run together, giving the person a blotchy look. The fever usually subsides after the rash has spread. The rash turns brown in color and fades after 3 or 4 days.

**measure**

(1) To read or otherwise obtain one or more numerical values from observations for analysis according to certain rules. (2) An aspect or dimension.

**measure of availability**

See *availability*.

**measure of central tendency**

Any variable or value which is used to represent the central tendency of a distribution, such as the mean, mode, or median.

**measure of dispersion**

Any value which is an indicator of the spread of a distribution, such as the range, variance, or standard deviation. Also known as *measure of variability* and *dispersion*.

**measure of variability**

See *measure of dispersion*.

**measured daywork**

That work performed at standard levels for an established hourly, nonincentive wage.

**measured work**

That work for which performance standards have been set using some form of work measurement technique.

**measurement**

The taking of data or the data resulting from a measure.

**measurement error**

The difference between the true value and the value initially obtained by the measuring device.

**measurement error standard deviation**

The square root of the within-subject variance when a group of individuals has each been measured more than once.

**measurement ton**

40 cubic feet.

**measuring and monitoring**

With regard to environmental performance, a system in place within an organization to measure and monitor actual performance against the organization's environmental objectives and targets in the areas of management systems and operational processes. This includes evaluation of compliance with relevant environmental legislation and regulations. The results should be analyzed and used to determine areas of success and to identify activities requiring corrective action and improvement.

**meat wrapper's asthma**

The respiratory response that may occur among meat-packaging personnel as a result of their exposure to contaminants emitted during the cutting and heat-sealing of the polyvinyl chloride plastic wrap used to package meat products.

**mechanical advantage**

The value of the ratio of force output by a mechanical device to the force applied to it.

**mechanical aeration**

Use of mechanical energy to inject air into water to cause a waste stream to absorb oxygen.

**mechanical efficiency**

The value of the ratio of external work performed to physiological energy production.

**mechanical filter respirator**

A respiratory protective device which provides protection from airborne particulates, such as dusts, mists, fumes, fibers, and other particulate type contamination.

**mechanical hazard**

Any unsafe situation due to machinery, equipment, tools, and/or physical structures.

**mechanical impedance ( $Z_m$ )**

The complex ratio of force to velocity during simple harmonic motion.

**mechanical noise**

Noise due to impact, friction, or vibration.

**mechanical ohm**

A unit for mechanical resistance, reactance, and impedance.

**mechanical reactance ( $X_m$ )**

The imaginary portion of mechanical impedance.

**mechanical resistance ( $R_m$ )**

(1) The real portion of the mechanical impedance; the opposition of a structure or object to a mechanical force either to change or to deform the structure. (2) A qualitative indication of the mechanical forces which must be overcome to move an object, control, or other mechanism.

**mechanical shock**

A relatively rapid transmission of mechanical energy into or out of a system.

**mechanical turbulence**

Random irregularities of fluid motion in air caused by buildings or non-thermal mechanical processes.

**mechanical ventilation**

Air movement caused by a fan or other type of air moving device.

**mechanics**

That field which studies the mechanical environmental effects on physical systems.

**mechanize**

To introduce machinery to carry out certain functions previously performed by humans.

**mechanoreceptor**

Any sensory receptor which is stimulated by a local change in mechanical pressure, force, or tension due to some type of movement.

**MED**

Minimal erythermal dose.

**media**

(1) The news press; those individuals representing public and/or private news gathering and reporting organizations. (2) Specific environments, such as air, water and soil, which are the subject of regulatory concern and activities. (3) General term referring to the substance or material on or in which a contaminant is collected. The media can be a liquid absorbent, solid adsorbent, filter, or other material. Typically referred to as the sampling media.

**medial**

Lying near or toward the midsagittal plane of the body or other approximately symmetrical structure.

**medial calf skinfold**

The thickness of a vertical skinfold on the medial surface of the calf at the level of the calf circumference point midway along the antero-posterior direction. Measured with the individual standing, the knee flexed 90° and the foot resting flat on an elevated platform.

**medial canthus**

See *endocanthus*.

**medial cuneiform bone**

One of the distal group of foot bones of the tarsus.

**medial malleolus height**

The vertical distance from the floor or other reference surface to the most medially projecting point of the medial ankle bone. Measured with the individual standing erect and his/her weight evenly distributed on both feet.

**medial rectus muscle**

A voluntary extraocular muscle located parallel to the optical axis along the medial side of the eyeball. Involved in rotating the anterior portion of the eyeball toward the body midline.

**median**

(1) In statistical analysis, that value point which is precisely in the center (i.e., half the

value points fall below the median and half lie above the median). (2) Situated in the mid-line, or in the *median plane*, of a body or structure.

**median category**

*Transit.* Inclusion of a median within a single instance of the road.

**median included**

*Transit.* Median is included within the instance of the road.

**median lethal concentration**

The concentration of a substance in air which is lethal to 50% or more of those exposed to it. *See also* *LC<sub>50</sub>*.

**median lethal dose**

The dose of a material/agent necessary to kill 50% of those receiving it. *See also* *LD<sub>50</sub>*.

**median lethal time**

That time required for 50% of the organisms to die following a given dose of a drug, radiation, biological agent, or other agent.

**median nerve**

A major nerve that controls the flexor muscles of the wrist and hand. Its location in the carpal tunnel of the wrist makes it susceptible to injury or trauma as a result of overuse of tendons that pass through the same area. When the tendons swell, the nerve may be pinched causing severe pain in an illness known as carpal tunnel syndrome (CTS).

**median not included**

*Transit.* Median is not included because there is no median or the median is wide enough to cause separate instances of road.

**median particle diameter**

The particle size, in micrometers, about which an equal number of particles are smaller or larger in size. *See also* *median particle size*.

**median particle size**

The median size of a particle in a distribution of particles by their size in microns. *See also* *median particle diameter*.

**mediastinum**

(1) A medium septum or partition. (2) The mass of tissues and organs separating the sternum in front and the vertebral column behind, commonly considered to have three divisions (anterior, middle, and superior).

**mediation**

A proceeding involving a disinterested party who hears a dispute and recommends a resolution. If all interested parties agree to abide by these recommendations, then the dispute will be considered resolved without having had to go before the courts.

**medical**

Pertaining, relating, or belonging to the study and practice of medicine, or the science and art of the investigation, prevention, cure, and alleviation of diseases.

**medical evidence**

Evidence furnished by doctors, nurses, and other medical personnel testifying in their professional capacity as experts, or by standard treatises on medicine or surgery.

**medical examiner**

Public officer charged with the responsibility of investigating all sudden, unexplained, unnatural, or suspicious deaths reported to him/her, including the performance of autopsies and assisting the state in criminal homicide cases.

**medical expert**

Any licensed physician found qualified to give testimony as an expert witness by a court.

**medical jurisprudence**

The science which applies the principles and practice of the different branches of medicine to the elucidation of doubtful questions in a court of law.

**medical pathology**

A disorder or disease.

**medical radiation**

Any ultrasound, electromagnetic, or particulate radiation emitted by or received from diagnostic or therapeutic radiological procedures.

**medical surveillance program**

A medical program that calls for detailed physical examinations for a specific or purpose.

**medical treatment**

According to OSHA 29 CFR 1904.12(d), includes treatment administered by a physician or by registered professional personnel under the standing orders of a physician. Medical

treatment does not include first aid treatment even though provided by a physician or registered professional personnel.

**medical waste**

(1) Isolation wastes, infectious agents, human blood and blood products, pathological wastes; sharps, body parts, contaminated bedding, surgical wastes and potentially contaminated laboratory wastes, dialysis wastes, and such additional medical items as the EPA Administrator shall prescribe by regulation (Federal Marine Protection, Research and Sanctuaries Act of 1972, Federal Water Pollution Control Act). (2) Any solid waste which is generated in the diagnosis, treatment, or immunization of human beings or animals, in research pertaining thereto, or in the production or testing of biologicals (Federal Solid Waste Disposal Act). Also referred to as *medically contaminated waste*.

**medically contaminated waste**

See *medical waste*.

**medicine**

(1) A drug or remedy. (2) The art or practice of healing.

**medium**

(1) An agent by which something is accomplished or impulse is transmitted. (2) A substance providing the proper nutritional environment for the growth of microorganisms.

**medium air traffic hub**

*Aviation.* A community enplaning from 0.25 to 0.99 percent of the total enplaned passengers in all services and all operations for all communities within the 50 States, the District of Columbia, and other U.S. areas designated by the Federal Aviation Administration.

**medium duty scaffold**

A scaffold designed and constructed to carry a working load not to exceed 50 pounds per square foot.

**medium frequency**

That portion of the electromagnetic spectrum consisting of radiation frequencies between 300 kHz and 3 MHz.

**medium or heavy trucks**

A motor vehicle with a Gross Vehicle Weight Rating (GVWR) greater than 10,000 pounds

(buses, motor homes, and farm and construction equipment other than trucks are excluded).

**medium regional carrier group**

Carrier groups with annual operating revenues less than \$19,999,999 or that operate only aircraft with 60 seats or less (or 18,000 lbs. maximum payload).

**medium size bus**

A bus from 29 to 34 feet in length.

**medium speed**

A speed not exceeding 40 miles per hour.

**medium voltage (MV) cable**

Type MV medium voltage cable is a single- or multi-conductor solid dielectric insulated cable rated 2000 volts or higher.

**medulla**

The central or inner portion of an organ.

**medulla oblongata**

That part of the hind brain lying between the pons above and the spinal cord below. It houses nerve centers for both motor and sensory nerves, where such functions as breathing and the beating of the heart are controlled.

**meets intent certification**

A certification used to indicate an equivalent level of safety is maintained despite not meeting the exact requirements stated in the document.

**mega-**

Prefix indicating 1 E+6.

**megacurie**

One million curies.

**megahertz (mHz)**

One million hertz.

**megawatt electric (MWE)**

One million watts of electric capacity.

**megger**

A high voltage resistance meter.

**MEI**

See *machine efficiency index*.

**meibomian cyst**

See *chalazion*.

**mel**

A 1,000 hertz tone, 40 decibels above a listener's threshold, produces a pitch of 1,000 mels.

**melanin**

Dark, sulfur-containing pigment normally found in the skin, ciliary body, choroid of the eye, pigment layer of the retina, certain nerve cells, and hair. It occurs abnormally in certain tumors, known as *melanomas*, and is sometimes excreted in the urine when such tumors are present.

**melanoma**

A malignant tumor containing dark pigment.

**melatonin**

A hormone produced in the pineal gland with a circadian cycle, and believed to have a relationship to circadian rhythms.

**melting point (mp)**

The temperature at which a solid changes to a liquid phase.

**membrane potential**

That voltage difference measured across the membrane between the interior and exterior of a cell or across an artificial membrane.

**membranous labyrinth**

A collection of soft-tissue ducts containing endolymph within the osseous labyrinth of the inner ear comprising the semicircular ducts, the cochlear duct, saccule, and utricle.

**memomotion**

A method of visually sampling work activities at specified periods of time using time-lapse photography or videography.

**memomotion study**

The use of memomotion for the analysis of long-duration events or processes. Also referred to as *camera study*.

**memorandum of understanding (MOU)**

An agreement in the nature of a contract between government agencies about how to interpret laws or regulations or implement policies or programs. Sometimes called a *memorandum of agreement (MOA)*.

**memorize**

To absorb information with perfect recall, usually in text, numeric, or pictorial form.

**memory**

(1) The capacity for mental storage of feelings, sensations, information, movement patterns, and events. The ability of the brain to retain and to use knowledge gained from past experience is essential to the process of

learning. Although the exact way in which the brain remembers is not completely understood, it is believed that a portion of the temporal lobe of the brain, lying in part under the temples, acts as a kind of memory center, drawing on memories stored in other parts of the brain. (2) Any of several types of storage means for bits in a computer.

**menarche**

That phase in a female's life when menstruation begins.

**Menière's disease**

A disorder of the labyrinth of the inner ear. It is believed to result from dilation of the lymphatic channels in the cochlea. In about 90 percent of cases, only one ear is affected. The usual symptoms are tinnitus, heightened sensitivity to loud sounds, progressive loss of hearing, headache, and dizziness. In the acute stage there may be severe nausea with vomiting, profuse sweating, disabling dizziness, and nystagmus. Some attacks last only minutes, and others continue for hours; they may occur frequently or only several weeks apart. The disease usually lasts a few years, with progressive loss of hearing in the affected ear. Sometimes the symptoms subside before all hearing is lost. If loss of hearing in the affected ear does become complete, nausea symptoms are likely to disappear. The disease sometimes develops after an injury to the head or an infection of the middle ear. Many cases, however, have no apparent cause. The disorder is most common among men between the ages of 40 and 60.

**meninges**

See *meninx*.

**meningitis**

Inflammation of the meninges, the membranes that cover the brain and spinal cord. There are several varieties of meningitis. The two most important are *meningococcal meningitis* (the most common) and *tuberculous meningitis*. Others include *aseptic meningitis* and *viral meningitis*. Meningococcal meningitis is caused by meningococci. It is generally the epidemic type and is very contagious because the bacteria are present in the throat as well as in the cerebrospinal fluid. It is transmitted by contact and by droplet infection. The incubation period for epidemic



meningitis is 2 to 10 days. Also called *cerebrospinal meningitis*.

**meninx**

A layer of tissue which covers the brain and spinal cord (plural is *meninges*).

**meniscus**

Something of crescent shape, as the concave or convex surface of a column of liquid in a pipette or burette, or a crescent-shaped fibrocartilage (semi-lunar cartilage) in the knee joint.

**menopause**

That phase of a women's life at which the menstrual cycle terminates.

**menses**

The time of menstruation.

**menstrual cycle**

The hormonally regulated period of approximately 28 days during which a woman normally undergoes ovulation and menses.

**menstruate**

To pass blood and other tissues from the uterus via the vaginal orifice during part of the menstrual cycle.

**mental**

Of or pertaining to the mind or intellectual/cognitive activities or functions.

**mental age**

The mental competence of an individual relative to the chronological age of an average individual with equivalent mental competence. *See also chronological age and developmental age.*

**mental basic element**

Any work element which involves some form of mental activity.

**mental health**

A state in which an individual or population has accomplished a high degree of self-realization and integrated its own desires while successfully adapting to its environment.

**mental hygiene**

That field of study and practice for the development and/or preservation of mental and emotional health.

**mental retardation**

A mental handicap in which less than normal intellectual functioning is exhibited.

**mental work**

Any work done by an individual primarily using perceptual and cognitive abilities, especially those involving such activities as calculating, reasoning, monitoring, decision-making, and verbal/image processing.

**mental workload**

Any measure of the amount of mental effort required to perform a task.

**menthol**

An alcohol from various mint oils or produced synthetically, used locally to relieve itching.

**menton**

The point at the tip of the chin in the midsagittal plane. Typically represented by the most anterior point in anterior-posterior measures, by the most inferior point in vertical measures.

**menton – crinion length**

The vertical distance from the bottom surface of the tip of the chin to the hairline in the midsagittal plane. Measured with the individual standing or sitting erect, looking straight ahead with the facial muscles relaxed (not applicable on bald or balding persons).

**menton projection**

The horizontal linear distance in the midsagittal plane from the most anterior point of the chin to the junction of the neck and the bottom of the jaw. Measured with the facial musculature relaxed.

**menton – sellion length**

The vertical linear distance from the inferior tip of the chin to the deepest point of the nasal root depression. Measured with the individual sitting or standing erect, looking straight ahead with the facial muscles relaxed.

**menton – subnasale length**

The vertical linear distance between the junction of the base of the nasal septum and the superior philtrum to the base of the chin in the midsagittal plane. Measured with the individual sitting or standing erect, looking straight ahead with the facial muscles relaxed.

**menton to back of head**

The horizontal linear distance frominion to the most anterior portion of the chin. Measured with the individual standing erect and looking straight ahead.

**menton to vertex**

The vertical linear distance from the inferior tip of the chin to the vertex plane level. Measured with the individual standing erect and looking straight ahead with the facial muscles relaxed.

**menton to wall**

The horizontal linear distance from a wall to the most anterior portion of the chin. Measured with the individual standing erect with his/her back and head against the wall.

**menu**

A display of the possible options available to the user from a given command location in a software package.

**menu bar**

A function area within a screen display which contains a menu.

**menu hierarchy**

The structure with which a menu is organized, generally with higher level menus providing access to other comparable level menus as well as lower level menus under a given level.

**MEOP**

See *maximum expected operating pressure*.

**meq**

Milliequivalent.

**mercurs**

Pertaining to mercury in its lower valence; containing monovalent mercury.

**mercury**

A chemical element, atomic number 80, atomic weight 200.59, symbol Hg. A heavy metal, existing in liquid state under standard conditions, that can accumulate in the environment and is highly toxic if breathed or swallowed. See also *heavy metal*.

**mercury-fluorescent lamp**

A relatively high-intensity discharge lamp using high pressure mercury enclosed within a tube whose interior is coated with phosphorus to convert the ultraviolet light into visible light.

**mercury lamp**

An illumination source which operates by passing an electrical current between two electrodes in an ionized mercury vapor atmosphere, giving off a bluish-green light with a significant amount of ultraviolet light.

**meridian**

An imaginary line on the surface of a globe or sphere, connecting the opposite ends of its axis.

**meridional flow**

A type of atmosphere circulation pattern in which the north-south component of the wind is pronounced.

**merit rating**

(1) The process of assessing, or the result of an assessment of, performance regarding an employee in a job, usually according to some periodic interval and some specified group of factors such as dependability and work quality or quantity. (2) The process of determining or the resulting determination of tax or insurance premium rates based on an employer's record for disabling injuries and layoffs. Also referred to as *experience rating*.

**mescaline**

A poisonous alkaloid derived from a Mexican cactus, which produces hallucinations of sound and color.

**mesh**

That latticework in computer modeling which divides a large object into finite elements.

**mesocyclone**

A vertical column of cyclonically rotating air within a severe thunderstorm.

**mesomorph**

A Sheldon somatotype denoted by prominent muscular tissue, heavy bones, broad shoulders, and a flat abdomen.

**meson**

A short-lived unstable particle with or without electric charge which generally weighs less than a proton and more than an electron.

**mesopic vision**

That vision using both the rods and cones at moderate luminous intensities; an intermediary between photopic and scotopic vision.

**mesoscale**

The scale of meteorological phenomena that

ranges in size from a few kilometers to about 100 kilometers. It includes local winds, thunderstorms, and tornadoes.

**mesosphere**

The atmospheric layer between the stratosphere and the thermosphere. Located at an average elevation between 50 and 80 kilometers above the earth's surface.

**mesothelioma**

A rare neoplasm that grows as a thick sheet in the pleura of the lungs and in the peritoneum. This condition has been demonstrated in workers who have had extensive exposures to asbestos. *See also asbestos.*

**mesothelium**

A layer of flat cells, derived from the mesoderm, that lines the coelom of the body cavity of the embryo. In the adult it forms the simple squamous-celled layer of the epithelium that covers the surface of all true serous membranes (peritoneum, pericardium, and pleura).

**message area**

A function area for the system or other users to communicate with a user.

**message line**

A single line within a message area.

**met**

A unit of physiological workload; the metabolic thermal output of an average, sitting, resting individual under conditions of thermal comfort.

**metabolic gradient**

A difference in degree of metabolic activity from one region of the body to another.

**metabolic heat production**

The transformation of chemical energy into heat energy by the body.

**metabolic rate**

The calories (or BTUs) required by the body to sustain vital functions, such as the action of the heart and breathing. The rate depends on the physical activity of the individual and physiological factors. Also referred to as *energy expenditure*. *See also basal metabolic rate.*

**metabolic reaction**

These include hydrolysis, oxidation, reduction, and conjugation (alkylation, esterification, and acylation).

**metabolic reserves**

The potential chemical energy source, stored primarily as glycogen, which can be rapidly mobilized for use by the body, especially for muscular activity involving effort beyond one's normal level of activity.

**metabolism**

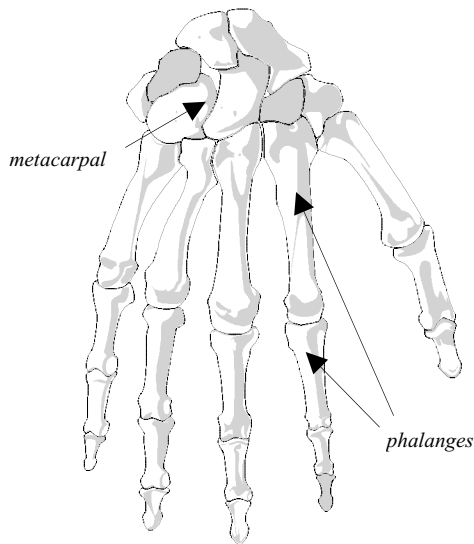
(1) The set of biochemical transformations that a chemical undergoes in the body by which energy is made available for use by the organism. (2) The sum total of the physical and chemical processes and reactions taking place among the ions, atoms, and molecules of the body. Essentially these processes are concerned with the disposition of the nutrients absorbed into the blood following digestion. There are two phases of metabolism: the anabolic and catabolic. The anabolic, or constructive, phase is concerned with the conversion of simpler compounds derived from nutrients into living, organized substances that the body cells can use. In the catabolic, or destructive, phase these organized substances are reconverted into simpler compounds, with the release of energy necessary for the proper functioning of the body cells. The rate of metabolism can be increased by exercise, by elevated body temperature (as in high fever, which can more than double the metabolic rate), by hormonal activity (such as that produced by thyroxine, insulin, and epinephrine), and by specific dynamic action that occurs following the ingestion of a meal. The *basal metabolic rate* refers to the lowest rate obtained while an individual is at complete physical and mental rest. This rate is frequently used in the diagnosis of various diseases, especially in malfunctioning of the thyroid gland.

**metabolite**

Any product (foodstuff, intermediate, waste product) of metabolism.

**metacarpal bone**

One of the bones in the hand between the wrist bones and the phalanges which make the rigid structure of the palm and back of the hand. *See also hand.*



*Metacarpal bones and their relationship to the phalanges*

### **metal-clad (MC) cable**

Type MC cable is a factory assembly of one or more conductors, each individually insulated and enclosed in a metallic sheath of interlocking tape, or a smooth or corrugated tube.

### **metal fume fever**

An acute condition, usually of short duration, caused by the inhalation of finely divided fumes of zinc, magnesium, copper, or their oxides, and possible others produced during hot work (such as welding). Symptoms can appear 4 to 12 hours after exposure and consist of fever and chills. Most cases are the result of inhalation of zinc oxide from the welding of galvanized steel.

### **metal halide lamp**

A high-intensity discharge lamp in which the primary light is produced from metal halide radiation and its dissociation products.

### **metalizing**

An industrial process involving the coating of parts with molten metal, usually aluminum, by means of vacuum deposition. The process often presents occupational health hazards from metal fumes, dust, heat, and non-ionizing radiation.

### **metallic**

Possessing a brilliant luster, characteristic of most metals.

### **metamer**

A visual stimulus which is perceptually indistinguishable from another visual stimulus un-

der one given type of illumination, but which has a different spectral composition and may be distinguishable under another type of illumination.

### **metameric pair**

Two colored visual stimuli which appear identical to the eye, but which consist of different spectral compositions.

### **metamerism**

A condition in which two colored stimuli appear the same under one illuminant but different under another illuminant.

### **metaphysis**

The region of bone growth near the ends of a long bone.

### **metastasis**

(1) Transmission of disease from the original site to one or more other sites elsewhere in the body. (2) Spread by malignancy from the site of primary cancer to a secondary site by transfer through the lymphatic or blood system. (3) The transfer of disease from one organ or part to another not connected with it. Metastasis may be due to the transfer of pathogenic microorganisms or to the transfer of cells, as occurs in malignant tumors. (4) The transfer of malignant neoplastic cells from the original or parent site to a more distant one, with the resultant appearance of a neoplasm.

### **metastasize**

To be transferred, transmitted, or transformed by metastasis. *See also* [metastasis](#).

### **metatarsal bone**

One of the bones of the foot anterior to the tarsus.

### **metencephalon**

(1) The part of the central nervous system comprising the pons and cerebellum. (2) The anterior of two brain vesicles formed by specialization of the rhombencephalon in the developing embryo.

### **Meteorological Impact Statement**

An unscheduled planning forecast describing conditions expected to begin within 4 to 12 hours which may impact the flow of air traffic in a specific Air Route Traffic Control Center's (ARTCC) area.

### **meteorology**

The study of the atmosphere and atmospheric phenomenon as well as the atmosphere's in-

teraction with the earth's surface, oceans, and life in general.

**meter (m)**

An SI/MKS unit of length; a distance equal to 1,650,763.73 wavelengths of the radiation emitted corresponding to the Krypton-86 atom transition between levels  $2p_{10}$  and  $5d_5$  in vacuum.

**meter-angle**

The amount of eye convergence when the visual axis of each eye is centered on an object one meter distant from the cornea of each eye.

**meter fix/slot time**

*Aviation.* A calculated time to depart the meter fix to cross the vertex at the Actual Calculated Landing Time (ACLT). This time reflects descent speed adjustment and any applicable time that must be absorbed prior to crossing the meter fix.

**metered data**

End-use data obtained through the direct measurement of the total energy consumed for specific uses within the individual household. Individual appliances can be sub-metered by connecting the recording meters directly to individual appliances.

**metering**

*Aviation.* A method of time regulating arrival traffic flow into a terminal area so as not to exceed a predetermined terminal acceptance rate.

**metering airports**

Airports adapted for metering and for which optimum flight paths are defined. A maximum of 16 airports may be adapted.

**metering fix**

*Aviation.* A fix along an established route from over which aircraft will be metered prior to entering terminal airspace. Normally, this fix should be established at a distance from the airport which will facilitate a profile descent 10,000 feet above airport elevation or above.

**meters, kilograms, and seconds (MKS) system**

A metric system of measurement. *See also basic units.*

**methadone**

A synthetic compound with pharmacological properties qualitatively similar to those of morphine.

**methamphetamine**

An adrenergic, central nervous system stimulant used in the treatment of narcolepsy, chronic fatigue states, alcoholism, and depression. Since it depresses the appetite, it is also used in the control of obesity. Its actions are similar to those of amphetamine and so it may produce insomnia, excitement, and elevation of blood pressure. Prolonged use can lead to dependence.

**methane**

A colorless, nonpoisonous, flammable gas created by anaerobic decomposition of organic compounds.

**methanol**

(1) A light, volatile alcohol ( $\text{CH}_3\text{OH}$ ) eligible for motor gasoline blending. (2) A colorless poisonous liquid with essentially no odor and very little taste. It is the simplest alcohol and boils at 64.7 degrees Celsius. In transportation, methanol is used as a vehicle fuel by itself (M100), or blended with gasoline (M85).

**methemoglobin**

(1) An oxidized form of hemoglobin containing iron in the ferric state. (2) A compound formed with hemoglobin as a result of the oxidation of iron present in hemoglobin, from the ferrous to ferric state. This form of hemoglobin does not combine with and transport oxygen to tissues.

**methemoglobinemia**

A blood disease caused by the accumulation of excessive methemoglobin in the blood, usually due to toxic action of drugs or other agents, or to the hemolytic process. In infants, it may be caused by the ingestion of water high in nitrates and may also be referred to as *blue baby syndrome* since the excessive concentration of reduced hemoglobin in the blood causes the surface of the skin to appear as a tinted blue, especially the fingers, hands, feet, lips, and ears. *See also cyanosis.*

**method**

A technique, orderly sequence of steps, or set of operations used to perform some given task.

**method 18**

An EPA test method which uses gas chromatographic techniques to measure the concentration of individual volatile organic compounds in a gas stream.

**method 24**

An EPA reference method to determine density, water content, and total volatile content (water and VOC) of coatings.

**method 25**

An EPA reference method to determine the VOC concentration in gas stream.

**method blank**

Used to calibrate the instrument chosen to test a sample.

**method of adjustment**

A psychophysical methodology in which the subject actively varies some aspect of a stimulus until the variable stimulus appears either to match or be just noticeably different from a fixed reference stimulus, as specified for the test.

**method of constant stimuli**

A psychophysical methodology in which stimuli are presented to the subject who is to make judgements about how they differ from a standard stimulus, whether greater or lesser along some dimension.

**method of equal-appearing intervals**

A psychophysical methodology in which the subject adjusts a set of stimuli until the elements of the set appear equidistant from each other along some dimension in an attempt to establish interval level data.

**method of limits**

A psychophysical methodology in which some dimension of a stimulus is changed in small increments in an ascending/descending manner until the subject either ceases responding or changes his/her response.

**method of loci**

A visualization type of mnemonic in which a sequence of locations is used to remember a sequence of events.

**method of magnitude estimation**

A psychophysical methodology in which a subject assigns relative quantitative values to stimuli based on their intensity compared to a reference value.

**method of paired comparisons**

A psychophysical methodology in which all possible pairs of stimuli are presented to a subject for comparison along one or more dimensions.

**method of rank order**

An ordinal-level psychophysical methodology in which stimuli are presented to a subject for ranking along a specified dimension.

**method of ratio estimation**

A psychophysical methodology in which a subject is instructed to adjust or rate a stimulus along some dimension such that it is a specified ratio of a reference stimulus.

**methodology**

The standard technique used to accomplish different tasks.

**methods design**

The process of developing improved work methods to improve job performance.

**methods engineering**

The analysis, design, and implementation of improved work methods and systems where human effort is used.

**methods of self-reporting**

Reporting of suspected violations of the law or corporate policy vary according to the size of the organization. They may include direct communication with a supervisor, suggestion boxes, toll-free numbers or hotlines. Such systems allow reports to be made without fear of retribution and maximum confidentiality. *See also Self-Reporting System.*

**methods study**

A systematic examination of the techniques, factors, and resources involved in the component parts of one or more operations. With the intent of improving techniques and productivity, while reducing costs.

**Methods Time Measurement (MTM)**

A predetermined motion time system (exists in several versions).

**methylate**

A compound of methyl alcohol and a base.

**metric**

Refers to the modernized metric system known as the International System.

**metric system**

International decimal system of weights and measures based on the meter and kilogram.

**metric ton (MT)**

(1) A unit of weight equal to 2,204.6 pounds.  
(2) 1000 kilograms; equal to 2204.6 pounds avoirdupois or 2679.23 pounds troy.



**metrocyte**

(1) A mother cell. (2) A large uninuclear cell containing hemoglobin; supposed to be the mother cell of the red corpuscles of the blood.

**Metropolitan Planning Area**

The geographic area in which the metropolitan transportation planning process required by 23 U.S.C. 134 and section 8 of the Federal Transit Act (49 U.S.C. app. 1607) must be carried out.

**Metropolitan Planning Organization (MPO)**

The forum for cooperative transportation decision making for a metropolitan planning area. Formed in cooperation with the state, develops transportation plans and programs for the metropolitan area. For each urbanized area, a Metropolitan Planning Organization (MPO) must be designated by agreement between the Governor and local units of government representing 75% of the affected population (in the metropolitan area), including the central cities or cities as defined by the Bureau of the Census, or in accordance with procedures established by applicable State or local law (23 U.S.C. 134(b)(1) of the Federal Transit Act of 1991, Sec. 8(b)(1)).

**metropolitan railway**

Another name for "heavy rail."

**Metropolitan Statistical Area (MSA)**

Areas defined by the U.S. Office of Management and Budget. A Metropolitan Statistical Area (MSA) is a) a county or a group of contiguous counties that contains at least one city of 50,000 inhabitants or more; or b) an urbanized area of at least 50,000 inhabitants and a total MSA population of at least 100,000 (75,000 in New England). The contiguous counties are included in an MSA if, according to certain criteria, they are essentially metropolitan in character and are socially and economically integrated with the central city. In New England, MSAs consist of towns and cities rather than counties. *See also central city and standard metropolitan statistical area.*

**metropolitan status**

A building classification referring to the location of the building either located within a

Metropolitan Statistical Area (MSA) or outside a MSA.

**MEUI**

*See machine effective utilization index.*

**MeV**

Mega electron volts or million electron volts. A unit of energy commonly used in nuclear physics equivalent to  $1.6 \times 10^{-6}$  ergs. Approximately 200 MeV are produced for every nucleus that undergoes fission.

**mfpcf**

*See million fibers per cubic foot.* The former method to express airborne asbestos fiber concentration.

**mg**

Milligram (0.001 gram (g) or 1000 micrograms (L)).

**mG**

Milligauss.

**mg/kg**

Milligrams per kilogram.

**mg/m<sup>3</sup>**

Milligram(s) per cubic meter.

**mgd**

*See million gallons per day.*

**mGy**

Milligray(s).

**mho**

A unit of conductance equal to the reciprocal of the ohm.

**mHz**

*See megahertz.*

**MIC**

*See manufacturer identification code.*

**mica pneumoconiosis**

A disease of the lung caused by excessive inhalation of mica dust usually over a period of many years.

**Michigan Anthropometric Processor (MAP)**

A software program developed by the University of Michigan for analog-to-digital acquisition and real-time checking of anthropometric data.

**micro-**

Prefix indicating one-millionth.

**microaerophilic**

Refers to organisms that are aerobic but require reduced concentrations of oxygen (pressures lower than 0.2 atmosphere) and elevated levels of carbon dioxide to grow.

**microbar**

A unit of pressure commonly used in acoustics and equal to one dyne per square centimeter.

**microbes**

Microscopic organisms, such as algae, viruses, rickettsia, bacteria, fungi, and protozoa, some of which cause disease in humans, plants, and/or animals.

**microbial**

See *biological contaminants*.

**microbial growth inhibition**

Control of growth of microorganisms by various methods (such as heat, dehydration, refrigeration, chemicals, etc.), that can also be used to destroy them in some cases.

**microbial pesticide**

A microorganism that is used to control a pest. They are of low toxicity to man.

**microbiologicals**

See *biological contaminants*.

**microbiology**

The science concerned with the study of microscopic and ultramicroscopic organisms (protistology).

**microbridge**

A cargo movement in which the water carrier provides a through service between an inland point and the port of load/discharge.

**microburst**

A small downburst with outbursts of damaging winds extending 2.5 miles or less. In spite of its small horizontal scale, an intense microburst could induce wind speeds as high as 150 knots.

**microchronometer**

A large-faced electric clock with marked time units in decimal minutes with rapidly moving hands used for noting the time in micromotion studies.

**microclimate**

The climate structure of the airspace near the surface of the earth.

**microcurie**

One-millionth of a curie.

**microearthquake**

A term used to describe earthquakes under Richter magnitude 2, and occasionally, slightly larger quakes, especially those not felt by people nearby.

**microelement**

An element of work which occurs in an interval of time too short to allow it to be adequately observed with the unassisted capacity of the human eye/perceptual system.

**microgravity**

Any environment in which objects of significant size and mass appear to remain suspended indefinitely, usually due to hypogravitational conditions on the order of  $10^{-6}$  g. Commonly referred to as *zero gravity*.

**microgravity growth factor**

That proportional increase in body height, primarily within the torso due to release from intervertebral disk compression, which an individual experiences when exposed to microgravity conditions. Generally about 3%.

**Micro-Matic Methods and Measurement**

A computerized predetermined motion time system.

**micrometeorology**

The meteorological characteristics of a local area that is usually small in size (e.g., acres or several square miles) and is often limited to a shallow layer of the atmosphere near the ground.

**micrometer ( $\mu\text{m}$ )**

A unit of length equal to one-millionth of a meter.

**micromicrocurie**

One-trillionth of a curie.

**micromicrogram**

One-millionth ( $10^{-6}$ ) microgram, or  $10^{-12}$  gram.

**micromole**

One millionth of a mole.

**micromotion data**

See *simultaneous motion chart*.

**micromotion study**

The use of normal or high-speed photographic or videographic frame rates for the frame-by-frame analysis of events or processes which

occur too rapidly for adequate real-time observation by the eye.

**micron**

A one-millionth part of a meter (i.e.,  $10^{-6}$  meter or  $10^{-4}$  centimeter). It is roughly four one-hundred thousandth ( $4 \times 10^{-5}$ ) of an inch.

**microorganism**

Any microscopic or submicroscopic organism, especially any of the viruses, rickettsia, bacteria, or protozoa.

**microphone**

An electroacoustic transducer that responds to sound waves and delivers essentially equivalent electric waves. A conduit for producing amplified sound.

**micropredator**

An organism that derives elements for its existence from other species of organisms larger than itself, without destroying them.

**microreciprocal Kelvin (mirek)**

A unit of reciprocal color temperature equal to  $10^{-6}/T_k$ .

**microscope**

An instrument used to obtain an enlarged image of small objects and reveal details of structure not otherwise distinguishable.

**microscopy**

By use of a microscope; investigation by means of a microscope.

**microsleep**

A very brief sleep period, usually on the order of a few seconds to minutes, in an individual who is not permitted to go to sleep but is too fatigued to remain awake.

**microspectrophotometer**

A device for measuring the wavelength and intensity of light absorbed as it passes through a transparent substance.

**microwave**

Nonionizing electromagnetic radiation that has a wavelength of 3 meters to 3 millimeters (a frequency of 30 mHz to 300 GHz), often used in cooking, radar, communications, and dosimetry.

**microwave cataract**

A partial or complete opacity of the eye lens due to microwave radiation exposure.

**microwave dosimetry**

The study or measurement of the amount of microwave energy to which a system is exposed.

**microwave hearing effect**

An auditory sensation apparent as a clicking or buzzing sound in humans exposed to pulsed microwave energy.

**microwave landing system (MLS)**

(1) An instrument landing system operating in the microwave spectrum which provides lateral and vertical guidance to aircraft having compatible avionics equipment. (2) A precision instrument approach system operating in the microwave spectrum which normally consists of the following components: a) azimuth station, b) elevation station, c) precision distance measuring equipment.

**microwave nonthermal effects**

The presumed non-heating effects from exposure to low power microwave energy.

**microwave oven**

Oven which is designed to heat, cook, or dry food through the application of electromagnetic energy, and which is designed to operate at a frequency of 916 megahertz (mHz) or 2.45 gigahertz (GHz).

**microwave radiation**

Electromagnetic radiation in the frequency range from 30 mHz to 300 GHz.

**microwave thermal effects**

An alteration in biological systems due to the heat produced by absorbed microwave energy.

**micturition**

The process of urine secretion.

**mid-**

Located at approximately the axial center of some entity.

**midaxillary line**

An imaginary or marked vertical line passing through the antero-posterior center of the axilla and down the side of the trunk.

**midaxillary line at umbilicus level skinfold**

The thickness of a skinfold at the umbilicus level in the midaxillary line. Measured with the individual standing comfortably erect and arms hanging naturally at the sides.

**midaxillary plane**

A vertical plane extending through the centers of the armpits which divides the body into anterior and posterior segments.

**midbrain**

The short part of the brain stem just above the pons. It contains the nerve pathways between the cerebral hemisphere and the medulla oblongata, and also contains nuclei (relay stations or centers) of the third and fourth cranial nerves. The center for visual reflexes, such as moving the head and eyes, is located in the midbrain.

**midday period**

The period between the end of the A.M. peak and the beginning of the P.M. peak.

**middle bar**

A bar in the middle of a river.

**middle compass locator (MCL)**

*Aviation.* A compass locator installed at the site of the middle marker of an instrument landing system.

**middle ear**

That portion of the ear within the temporal bone in which the auditory ossicles are located, between the tympanic membrane and the oval and round windows.

**middle latitude cyclone**

*See extratropical cyclone.*

**middle marker (MM)**

*Aviation.* A marker beacon that defines a point along the glideslope of an instrument landing system (ILS) normally located at or near the point of decision height (ILS Category I). It is keyed to transmit alternate dots and dashes, with the alternate dots and dashes keyed at the rate of 95 dot/dash combinations per minute on a 1300 Hz tone, which is received aurally and visually by compatible airborne equipment. *See also compass locator, glideslope, instrument landing system, localizer, and outer marker.*

**middle ultraviolet**

That portion of the ultraviolet radiation spectrum from about 200 to 300 nm.

**midget**

A normal dwarf. An individual who is undersized but perfectly proportioned.

**midget impinger**

A sampling device which can be used to collect dusts for concentration determinations by the light field microscopic technique or to collect materials (gases, mists, or vapors) by absorption in a liquid absorbent material. The sampling rate for dusts by this method is 0.1 cubic feet per minute and the result is expressed as millions of particles per cubic foot of air.

**midgrade unleaded gasoline**

Gasoline having an antiknock index (R+M/2) greater than or equal to 88, or less than or equal to 90, and containing not more than 0.05 grams of lead or 0.005 grams of phosphorus per gallon. *See also fuel, gasohol, gasoline, and kerosene.*

**midi**

*See musical instrument digital interface.*

**midline**

An imaginary line or plane which divides a structure into two approximately symmetrical parts.

**midpatella**

A point on the patella which is midway between the superior and the inferior margins of the patella.

**midpatella height**

The vertical distance from the floor or other reference surface to midpatella. Measured with the individual standing erect, but with relaxed leg musculature, and his/her weight evenly distributed between both feet.

**mid-rail**

A rail approximately midway between a guardrail and a platform, used when required, and secured to the uprights erected along the exposed sides and ends of platforms.

**midsagittal**

Pertaining to the midsagittal plane or a point on it.

**midsagittal plane**

The imaginary plane which divides the body or other (approximately) symmetrical structure into right and left sections.

**midshoulder**

A point half way between the neck-shoulder junction and acromion.

**midshoulder height, sitting**

The vertical distance from the seat upper surface to midshoulder. Measured with the individual sitting erect, with the head and back against a wall.

**midhigh**

A position midway between the inguinal crease and superior aspect of the patella along the midline of the leg as described in the thigh length measure.

**MIG welding**

Metal inert gas welding.

**migraine**

A headache, usually severe, often limited to one side of the head, and sometimes accompanied by nausea and vomiting. Although the cause is not completely understood, migraine is thought to be associated with constriction and then dilation of the cerebral arteries. It is also thought to have a psychological aspect, since it occurs most often in persons with particular types of personalities and often follows emotional disturbances. Migraine tends to run in families. In women, the headaches often occur during menstrual periods. The symptoms of migraine vary greatly not only from person to person but also from time to time in the same person. The headaches are usually intense and they frequently occur on one or the other side of the head. They are often accompanied by nausea and vomiting. A typical migraine attack begins with changes in vision, such as a flickering before the eyes, flashes of light, or a blacking out of part of the sight.

**migration**

In air sampling, the undesired transfer of an absorbed material from the front section of a solid sorbent tube to the back-up section.

**mil**

Unit of length equal to one-thousandth of an inch. Also, one-thousandth of a radian.

**Milankovitch theory**

A theory proposed by Milutin Milankovitch in the 1930s suggesting that changes in the earth's orbit were responsible for climatic changes and the ice ages.

**miliaria**

A cutaneous condition with retention of sweat, which is extravasated at different levels

in the skin. Also called *prickly heat* or *heat rash*.

**mile**

A statute mile (5,280 feet). Most mileage computations are based on statute miles.

**mile board**

A 12 by 36 inch board mounted horizontally above a shore to aid in navigation and labeled with the river mileage at that point.

**mile marker**

A point on a feature indicating the distance, in miles, measured along the course or path of the feature from an established origin point on the feature.

**mileage death rate**

See *motor vehicle incidence rate*.

**miles in trail**

A specified distance between aircraft, normally in the same stratum associated with the same destination or route of flight.

**miles of road operated**

The single or first main track, measured by the distance between terminals, over which railway transportation service is conducted.

**miles of track**

The number of tracks per one mile segment of right-of-way. Miles of track are measured without regard to whether or not rail traffic can flow in only one direction on the track. All track is counted, including yard track.

**miles of track operated**

Total track mileage consisting of first, second, and other main tracks, and of yard tracks and sidings over which railway transportation service is conducted. See also *track mile*.

**miles per gallon (MPG)**

A measure of vehicle fuel efficiency. Miles per gallon (MPG) represents "fleet miles per gallon." For each subgroup or "table cell," MPG is computed as the ratio of the total number of miles traveled by all vehicles in the subgroup to the total number of gallons consumed. MPGs are assigned to each vehicle using the Environmental Protection Agency (EPA) certification files and adjusted for on-road driving.

**miles per gallon (MPG) shortfall**

The difference between actual on-road miles per gallon (MPG) and Environmental Protec-

tion Agency (EPA) laboratory test MPG. Miles per gallon (MPG) shortfall is expressed as gallons per mile ratio (GPMR).

**milieu**

Environment or surroundings.

**milinch**

One-thousandth of an inch.

**military approach controls**

*Aviation.* Military approach control facilities include Army Radar Approach Controls (ARACs), Radar Air Traffic Control Facilities (RATCFs), and Radar Approach Controls (RAPCONs).

**military authority assumes responsibility for aircraft separation**

A condition whereby the military services involved assume responsibility for separation between participating military aircraft in the Air Traffic Control (ATC) system. It is used only for required instrument flight rules (IFR) operations which are specified in letters of agreement or other appropriate Force Module (FM) or military documents.

**military base**

An area owned and operated by the government in which various military activities take place.

**military fuel**

Kerosene-type jet fuel intended for military use.

**military instrument flight rules (IFR) training route**

Routes used by the Department of Defense and associated Reserve and Air Guard units for the purpose of conducting low altitude navigation and tactical training in both instrument flight rules (IFR) and visual flight rules (VFR) weather conditions below 10,000 feet mean sea level (MSL) at airspeeds in excess of 250 knots indicated airspeed (IAS).

**military operations**

(1) *General.* Refers to all classes of military operations. (2) *Aviation.* Arrivals and departures of aircraft not classified as civil.

**military operations area (MOA)**

*Aviation.* An airspace assignment of defined vertical and lateral dimensions established outside positive control areas to separate/segregate certain military activities from

intermediate fix (IF) traffic and to identify for visual flight rules (VFR) traffic where these activities are conducted.

**Military Standard (MIL-STD)**

A mandatory standard issued by the U.S. Department of Defense for use by contractors or others in manufacturing items for DOD use. *See also Department of Defense Standard.*

**military training route**

*Aviation.* Airspace of defined vertical and lateral dimensions established for the conduct of military flight training at airspeeds in excess of 250 knots IAS.

**milk run**

*Transit (slang).* An easy trip.

**mill capital**

Cost for transportation and equipping a plant for processing ore or other feed materials.

**milli-**

Prefix indicating one-thousandth or  $10^{-3}$  of the basic unit.

**milliampere**

One-thousandth of an ampere.

**millibar**

One-thousandth of the standard barometric pressure,  $1 \text{ E}+2$  newtons per square meter, or  $9.87 \text{ E}-4$  bar.

**millicurie**

One-thousandth of a curie.

**millicurie-of-intensity-hour**

*See sievert.*

**milliequivalent**

One-thousandth of an equivalent weight of a substance.

**milligram**

One-thousandth of a gram.

**milligram-hour**

A unit of radiation dose, equivalent to 1 milligram of radium for one hour.

**milliliter**

One-thousandth of a liter.

**millimeter**

One-thousandth of a meter.

**millimeter of mercury (mm Hg)**

A unit of pressure equal to that exerted by a column of liquid mercury one millimeter high at standard temperature.



**millimicron**

Unit of length equal to one-thousandth of a micron.

**millimole**

One-thousandth of a mole.

**million-gallons per day (mgd)**

A measure of water flow.

**millions of fibers per cubic foot of air (mfpcf)**

Former unit of expressing the airborne concentration of asbestos fibers in air.

**millions of particles per cubic foot of air (mppcf)**

Former unit for expressing the airborne concentration of dusts, such as coal dust.

**millirem**

One-thousandth of a rem. *See also rem.*

**milliroentgen**

One-thousandth of a roentgen. *See also roentgen.*

**Minamata disease**

A neurological disorder caused by alkyl mercury poisoning, typically characterized by peripheral and circumoral parasthesia, ataxia, dysarthria, and loss of peripheral vision and leading to permanent neurological and mental disability or death.

**Mine Safety and Health Administration (MSHA)**

A United States federal agency which regulates matters pertaining to health and safety issues regarding mining operations and the mineral industry. It carries out inspections, investigations, enforces regulations, provides technical support, develops relevant training programs, and assesses penalties for violations of regulations.

**mineral**

A naturally occurring inorganic homogeneous substance. There are 19 or more minerals forming the mineral composition of the human body, at least 13 are essential to health.

**mineral-insulated (MI) metal-sheathed cable**

Type MI metal-sheathed cable is a factory assembly of one or more conductors insulated with a highly compressed refractory mineral insulation and enclosed in a liquid-tight and gas-tight continuous copper sheath.

**mineral resources**

All nonliving, natural, nonrenewable resources, including fossil fuels, minerals, whether metallic or nonmetallic, but not including ice, water, or snow.

**mineral wool**

A manmade mineral fiber material that is made from various types of silicate rock. Also referred to as rock wool or slag wool, depending upon the source.

**miner's asthma**

Asthma associated with anthracosis.

**miner's cramp**

*See heat cramps.*

**miner's helmet**

A safety helmet with an attached lamp.

**mini-Gym**

*See MK-1, II.*

**mini landbridge**

*Transportation.* An intermodal system for transporting containers first by ocean and then by rail or motor to a port for additional transport over water.

**mini service**

Service station attendants pump vehicle fuel but do not provide other services, such as checking oil and tire pressure or washing windshields.

**miniature railway**

Small-scale railway used for amusement.

**minibridge**

A joint water, rail, or truck container move on a single Bill of Lading for a through route from a foreign port to a U.S. port destination through an intermediate U.S. port or the reverse. *See also intermodal and landbridge.*

**minimal passageway**

That minimal height and width of a corridor which allows an individual clothed for specified working conditions to pass without conflict with boundaries or other persons.

**minimal perceptible erythema**

*See erythema threshold.*

**minimal weight**

The least amount a person can weigh without endangering lean body mass and essential fat storage.

**minimum**

The lowest active, existing, or permissible value.

**minimum altitude**

Minimum altitudes for instrument flight rules (IFR) operations as prescribed in Federal Aviation Regulation (FAR) Part 91. These altitudes are published on aeronautical charts and prescribed in FAR Part 96 for airways and routes, and in FAR Part 97 for standard instrument approach procedures. If no applicable minimum altitude is prescribed in FAR Part 96 or FAR Part 97, the following minimum IFR altitude applies: a) in designated mountainous areas, 2,000 feet above the highest obstacle within a horizontal distance of 4 nautical miles from the course to be flown; b) other than mountainous areas, 1,000 feet above the highest obstacle within a horizontal distance of 4 nautical miles from the course to be flown; or c) as otherwise authorized by the [Federal Aviation Administration (FAA)] Administrator or assigned by Air Traffic Control (ATC).

**minimum angle of resolution**

See *minimum resolution angle*.

**minimum cost life**

See *economic life*.

**minimum crossing altitude**

The lowest altitude at certain fixes at which an aircraft must cross when proceeding in the direction of a higher minimum en route instrument flight rules (IFR) altitude (MEA).

**minimum descent altitude (MDA)**

The lowest altitude, expressed in feet above mean sea level, to which descent is authorized on final approach or during circle-to-land maneuvering in execution of a standard instrument approach procedure where no electronic glide slope is provided. See also *height above airport*.

**minimum design duct velocity**

See *transport velocity*.

**minimum detectable quantity**

In instrumentation, the amount of material (e.g., micrograms) which gives a response equal to twice the detector noise level.

**minimum detectable sensitivity**

In instrumentation, the smallest amount of input concentration that can be detected as the concentration approaches zero.

**minimum detection limit**

The lowest concentration or weight of a substance which an instrument can reliably quantify.

**minimum dose**

The smallest quantity of an agent which will produce a physiological effect.

**minimum en route instrument flight rules (IFR) altitude (MEA)**

The lowest published altitude between radio fixes which assures acceptable navigational signal coverage and meets obstacle clearance requirements between those fixes. The minimum en route altitude (MEA) prescribed for a federal airway, or segment thereof, area navigation low or high route, or other direct route applies to the entire width of the airway, segment, or route between the radio fixes defining the airway, segment, or route.

**minimum erythematous dose**

(1) The amount of energy (usually ultraviolet) expressed in microwatt-seconds per square centimeter of skin to which skin can be safely exposed. (2) The smallest radiant exposure (e.g., UV radiation) that produces a barely perceptible reddening of the skin that disappears after 24 hours. Also referred to as *minimal erythematous dose*.

**minimum fuel**

*Aviation*. Indicates that an aircraft's fuel supply has reached a state where, upon reaching the destination, it can accept little or no delay. This is not an emergency situation but merely indicates an emergency situation is possible should any undue delay occur. See also *fuel remaining*.

**minimum holding altitude**

The lowest altitude prescribed for a holding pattern which assures navigational signal coverage, communications, and meets obstacle clearance requirements.

**minimum instrument flight rule (IFR) altitude (MIA)**

Minimum altitudes for Instrument Flight Rules (IFR) operations as prescribed in Federal Aviation Regulations (FAR) Part 91.

**minimum lethal dose (MLD)**

The smallest dose which kills one of a group of test animals (an older term no longer used).

**minimum/minimal separable acuity**

See *minimum resolution angle*.

**minimum navigation performance specifications (MNPS)**

A set of standards which requires aircraft to have a minimum navigation performance capability in order to operate in MNPS-designated airspace. In addition, aircraft must be certified by their State of Registry for MNPS operation.

**minimum navigation performance specifications airspace (MNPSA)**

Designated airspace in which minimum navigation performance specifications (MNPS) procedures are applied between MNPS certified and equipped aircraft. Under certain conditions, non-MNPS aircraft can operate in Minimum Performance Specifications Airspace (MNPSA). However, standard oceanic separation minima are provided between the non-MNPS aircraft and other traffic. Currently, the only designated MNPSA is described as follows: a) between Flight Levels 275 and 400; b) between latitudes 27-N. and the North Pole; c) in the east, the eastern boundaries of the Control Areas (CTA) Santa Maria Oceanic, Shanwick Oceanic, and Reykjavik; d) in the west, the western boundaries of CTA's Reykjavik and Gander Oceanic and New York Oceanic excluding the area west of 60-W and south of 38-30'N.

**minimum obstruction clearance altitude**

The lowest published altitude in effect between radio fixes on very high frequency (VHF) omnidirectional range (VOR) airways, off-airway routes or route segments which meets obstacle clearance requirements for the entire route segment and which assures acceptable navigational signal coverage only within 25 statute (22 nautical) miles of a VOR.

**minimum pool elevation**

*Maritime.* The least depth to which a pool is permitted to go and still maintain project channel depth.

**minimum population estimate**

An estimate of the number of animals in a stock that is based on the best available scientific information on abundance, incorporating the precision and variability associated with such information and provides reasonable as-

surance that the stock size is equal to or greater than the estimate.

**minimum resolution angle**

The smallest angular or linear separation at which an individual can resolve two visual objects as separate under a specified set of conditions. Also referred to as *angle of resolution*, *minimum angle of resolution*, *resolution angle*, and *minimum/minimal separable acuity*.

**minimum safe altitude (MSA)**

*Aviation.* (1) The minimum altitude specified in Federal Aviation Regulation (FAR) Part 91 for various aircraft operations. (2) Altitudes depicted on approach charts which provide at least 1,000 feet of obstacle clearance for emergency use within a specified distance from the navigation facility upon which a procedure is predicated. These altitudes will be identified as Minimum Sector Altitudes or Emergency Safe Altitudes and are established as follows: a) Minimum Sector Altitudes. Altitudes depicted on approach charts which provide at least 1,000 feet of obstacle clearance within a 25-mile radius of the navigation facility upon which the procedure is predicated. Sectors depicted on approach charts must be at least 90 degrees in scope. These altitudes are for emergency use only and do not necessarily assure acceptable navigational signal coverage; b) Emergency Safe Altitudes. Altitudes depicted on approach charts which provide at least 1,000 feet of obstacle clearance in non-mountainous areas and 2,000 feet of obstacle clearance in designated mountainous areas within a 100-mile radius of the navigation facility upon which the procedure is predicated and normally used only in military procedures. These altitudes are identified on published procedures as "Emergency Safe Altitudes."

**minimum safe altitude warning (MSAW)**

A function of the Automated Radar Terminal System (ARTS) III computer that aids the controller by alerting him when a tracked Mode C equipped aircraft is below or is predicted by the computer to go below a predetermined minimum safe altitude.

**minimum sector altitude**

The lowest altitude which may be used under emergency conditions which will provide a minimum clearance of 300 m (1,000 feet)

above all obstacles located in an area contained within a sector of a circle of 46 km (25 nautical miles) radius centered on a radio aid to navigation.

**minimum transport velocity**

The minimum velocity necessary to transport particulates through a ventilation system without their settling out. *See also transport velocity.*

**minimum vectoring altitude (MVA)**

The lowest mean sea level (MSL) altitude at which an instrument flight rule (IFR) aircraft will be vectored by a radar controller, except as otherwise authorized for radar approaches, departures, and missed approaches.

**minimum wage**

The minimum hourly rate of compensation for labor, as established by federal statute and required of employers engaged in businesses which affect interstate commerce.

**minimums**

*Aviation.* Term used to describe the weather condition requirements established for a particular operation or type of operation, e.g., instrument flight rules (IFR) takeoff or landing, alternate airport for IFR flight plans, visual flight rules (VFR) flights, etc.

**mining**

The process or business of extracting from the earth the precious or valuable metals, either in their native state or in their ores.

**mining danger area**

An area identified as a danger to maritime navigation due to unexploded ordnances.

**mining waste**

Residues which result from the extraction of raw materials from the earth.

**minivan**

A type of small van that first appeared with that designation in 1984. Any of the smaller vans built on an automobile-type frame. Earlier models such as the Volkswagen van are now included in this category. *See also automobile, bus, car, and motor vehicle.*

**minnie**

*Transit (slang).* Less than 100 pound shipment.

**minometer**

An instrument for measuring stray radiation from radioactive sources.

**minor**

An individual less than 18 years of age.

**minor arterial**

*Transit.* Streets and highways linking cities and larger towns in rural areas in distributing trips to small geographic areas in urban areas (not penetrating identifiable neighborhoods). *See also arterial highway and principal arterial.*

**minor axis**

The shorter axis defining an ellipse.

**minor defect**

A defect which may affect appearance, slightly reduce functionality, or other characteristics, but which causes no serious malfunction.

**minor injury**

An occupational or other injury in which no significant amount of time from work is lost and no major medical costs are incurred.

**Minor's sweat test**

An examination to measure possible damage to the sympathetic nervous system by determining which dermatomes of the body do not perspire.

**minute respiratory volume**

The total volume of air moved into and out of the respiratory system per minute.

**minutes in trail**

*Aviation.* A specified interval between aircraft expressed in time. This method would more likely be utilized regardless of altitude.

**miosis**

Contraction of the pupil of the eye.

**mirage**

A refraction phenomenon that makes an object appear to be displaced from its true position. When an object appears higher than it actually is, it is called a *superior mirage*. When an object appears lower than it actually is, it is an *inferior mirage*.

**mirek**

*See microreciprocal Kelvin.*

**mirror**

(1) A highly specularly reflecting surface. (2) To create a mirror image in computer modeling or graphics.

**mirror image**

A structure which would correspond at least in part to the reflection of another part of an original object about some plane.

**mirror stereoscope**

A laboratory device used to present separate images of a scene to each of the eyes by a system of mirrors. Also referred to as *Wheatstone stereoscope*.

**misbehavior**

Ill conduct; improper or unlawful behavior.

**misbranded**

According to the Federal Insecticide, Fungicide, and Rodenticide Act: A pesticide is misbranded if (1) its labeling bears any statement, design, graphic representation relative thereto or to its ingredients which is false or misleading in any particular; (2) it is contained in a package or other container or wrapping which does not conform to the standards established by the Administrator of the EPA pursuant to Title 7 Agriculture (Environmental Pesticide Control); (3) it is an imitation of, or is offered for sale under the name of, another pesticide; (4) its label does not bear the registration number assigned under Title 7 to each establishment in which it was produced; (5) any word, statement, or other information required by or under authority of Title 7 to appear on the label or labeling is not prominently placed thereon with such conspicuousness (as compared with other words, statements, designs, or graphic matter in the labeling) and in such terms as to render it likely to be read and understood by the ordinary individual under customary conditions of purchase and use; (6) the labeling accompanying it does not contain directions for use which are necessary for effecting the purpose for which the product is intended and if complied with, together with any requirements imposed under Title 7, are adequate to protect health and the environment; (7) the label does not contain a warning or caution statement which may be necessary and if complied with, together with any requirements imposed under Title 7, is adequate to protect health and the environ-

ment; or (8) in the case of a pesticide not registered in accordance with Title 7 and intended for export, the label does not contain, in words prominently placed thereon with such conspicuousness (as compared with other words, statements, designs, or graphic matter in the labeling) as to render it likely to be noted by the ordinary individual under customary conditions of purchase and use, the following: "Not Registered for Use in the United States of America".

A pesticide is also misbranded if the label does not bear an ingredient statement on that part of the immediate container (and on the outside container or wrapper of the retail package, if there is one, through which the ingredient statement on the immediate container cannot be clearly read) which is presented or displayed under customary conditions of purchase, except that a pesticide is not misbranded under this subparagraph if (1) the size or form of the immediate container, or the outside container or wrapper of the retail package, makes it impracticable to place the ingredient statement on the part which is presented or displayed under customary conditions of purchase; and (2) the ingredient statement appears prominently on another part of the immediate container, or outside container or wrapper, permitted by the EPA Administrator.

A pesticide is also misbranded if the labeling does not contain a statement of the use classification under which the product is registered.

A pesticide is also misbranded if there is not affixed to its container, and to the outside container or wrapper of the retail package, if there is one, through which the required information on the immediate container cannot be clearly read, a label bearing (1) the name and address of the producer, registrant, or person for whom produced; (2) the name, brand, or trademark under which the pesticide is sold; (3) the net weight or measure of the content, except that the EPA Administrator may permit reasonable variations; and (4) when required by regulation of the EPA Administrator to effectuate the purposes of Title 7, the registration number assigned to the pesticide under Title 7 and the use classification.

The pesticide is also misbranded if it contains any substance or substances in quantities highly toxic to man, unless the label shall bear, in addition to any other matter required by Title 7 (1) the skull and crossbones; (2) the word "poison" prominently in red on a background of distinctly contrasting color; (3) and a statement of a practical treatment (first aid or otherwise) in case of poisoning by the pesticide.

**miscellaneous transport revenue**

*Aviation.* Other revenues associated with air transportation performed by air carriers, such as transportation fees collected from those traveling on free or reduced transportation and processing service charges such as lost tickets.

**miscible**

Capable of being mixed in any concentration without separation of phrases.

**misconduct**

A transgression of some established and definite rule of action; a forbidden act; a dereliction from duty; unlawful behavior; willful in character; improper or wrong behavior; delinquency; impropriety; mismanagement; offense; but not negligence or carelessness.

**misdemeanor**

Offenses lower than felonies and generally those punishable by fine, penalty, forfeiture, or imprisonment.

**misfeasance**

The improper performance of some act which a person may lawfully do.

**mishap**

An occurrence that results in some degree of injury, property damage, or both.

**misrepresentation**

Any manifestation by words or other conduct by one person to another that, under the circumstances, amounts to an assertion not in accordance with the facts. An untrue statement of fact.

**missed approach**

*Aviation.* (1) A maneuver conducted by a pilot when an instrument approach cannot be completed to a landing. The route of flight and altitude are shown on instrument approach procedure charts. A pilot executing a missed

approach prior to the missed approach point (MAP) must continue along the final approach to the MAP. The pilot may climb immediately to the altitude specified in the missed approach procedure. (2) A term used by the pilot to inform Air Traffic Control (ATC) that he is executing the missed approach. (3) At locations where ATC radar service is provided, the pilot should conform to radar vectors when provided by ATC in lieu of the published missed approach procedure. *See also go around.*

**missed approach point**

*Aviation.* A point prescribed in each instrument approach procedure at which a missed approach procedure shall be executed if the required visual reference does not exist.

**missed approach procedure**

*Aviation.* The procedure to be followed if the approach cannot be continued.

**missed executed approach**

*Aviation.* Instructions issued to a pilot making an instrument approach which means continue inbound to the missed approach point and execute the missed approach procedure as described on the Instrument Approach Procedure Chart or as previously assigned by Air Traffic Control (ATC). The pilot may climb immediately to the altitude specified in the missed approach procedure upon making a missed approach. No turns should be initiated prior to reaching the missed approach point. When conducting an airport surveillance radar (ASR) or precision approach radar (PAR) approach, execute the assigned missed approach procedure immediately upon receiving instructions to "execute missed approach."

**missile**

Sometimes applied to space launch vehicles, but more properly connotes automated weapons of warfare, i.e., a weapon which has an integral system of guidance, as opposed to the unguided rocket.

**mission**

That designated activity at a particular location which a system is intended to accomplish.

**mission reliability**

The probability that a given product or system will complete a specified mission.



### **Mississippi River System**

Includes the Mississippi River from the head of navigation to its mouth, and navigable tributaries including the Illinois Waterway, Missouri River, Ohio River, Tennessee River, Allegheny River, Cumberland River, Green River, Kanawha River, Monongahela River, and such others to which barge operations extend.

### **mist**

Liquid particles, measuring 40 to 50 microns, that are generated by condensation from the gaseous state to the liquid state, or by the break up of a liquid into a dispersed state (splashing, foaming, or atomizing). In contrast, *fog* particles are smaller than 40 microns.

### **mistake**

Some unintentional act, omission, or error arising from ignorance, surprise, imposition, or misplaced confidence. A state of mind not in accord with reality.

### **mistrial**

An erroneous, invalid, or nugatory trial. A trial of an action which cannot stand in law because of want of jurisdiction, or a wrong drawing of jurors, or disregard of some other fundamental that expenditure of further time and expense would be wasteful if not futile. It is a trial which has been terminated prior to its normal conclusion. The judge may declare a mistrial because of some extraordinary event (e.g., death of a juror or attorney), for prejudicial error that cannot be corrected at trial, or because of a deadlocked jury.

### **miter gates**

*Maritime Navigation.* Vertical gates which form the openings of navigation locks; these gates consist of two swinging leaves and close at the center.

### **miter sill**

*Maritime Navigation.* The underwater concrete sill across the openings in the upper and lower lock chamber that the movable lock gates close on. The depth over these cells exceeds project depth and is registered on the several gauges within the lock chamber.

### **mitigating factors**

Under the Federal Sentencing Guidelines (FSGs): A reduction in the amount of damages or penalties. According to the FSGs,

penalties may be reduced if an organization a) has an effective compliance program to prevent and detect criminal conduct, and b) is willing to self-report violations and is cooperative and accepting of responsibility for any violations. *See also Federal Sentencing Guidelines.*

### **mitigation**

Measures taken to reduce adverse impacts on the environment, the workplace, or both.

### **mitigation of damages**

Although the law of damages contemplates full and just compensation for negligently inflicting injuries, the law also prescribes, as a reciprocal principle, that a tortfeasor should not sustain liability for those damages not attributable to the injury producing event. Consequently, a plaintiff may not recover damages for the effects of an injury which reasonably could have been avoided or substantially ameliorated. This limitation on recovery is generally referred to as *mitigation of damages* or *avoidance of consequences*. Mitigation of damages or avoidance of consequences arises only after the injury-producing event has occurred.

### **mitosis**

Nuclear cell division in which the resulting nuclei have the same number and kind of chromosomes as the original cell. The first step in mitosis is duplication of all genes and chromosomes. To accomplish this, the cell must double its content of DNA. Chromosomes are composed of the DNA molecule loosely bound with protein; genes are segments of the DNA molecule. Since the DNA molecule has the ability to duplicate itself (replication), it is possible for the cell to form two identical sets of chromosomes and genes. After they are duplicated, they divide between the two separate nuclei that have formed. The final step in mitosis is the splitting of the parent cell into two identical daughter cells, each with a full complement of genes and chromosomes. Most cells of the body are continually growing and reproducing, so that when the old cells die the new ones take their place. Thus, mitosis is a continuous process. It is obvious that this reproduction must take place in an orderly manner, but the exact way in which cell growth and reproduction are regulated is not completely understood. Although

certain cells such as blood-forming cells of the skin grow and reproduce continually, other cells such as neurons (nerve cells) do not reproduce during a person's lifetime. Neoplastic disorders such as cancer are a result of the abnormal and unrestricted growth and reproduction of certain body cells.

**mitten**

A type of fitted hand wear for covering the hand which has a slot for the thumb, but does not contain separate finger slots.

**mixed cargo**

Indicates that a vessel carries any combination of grains, government aid, containers, general or bulk cargoes.

**mixed cloud**

A cloud containing both water drops and ice crystals.

**mixed liquor**

A mixture of activated sludge and water containing organic matter undergoing activated sludge treatment in an aeration tank.

**mixed radioactive and other hazardous substances**

Material containing both radioactive hazardous substances and non-radioactive hazardous substances, regardless of whether these types of substances are physically separated, combined chemically, or simply mixed together.

**mixed trains**

Mixed trains are passenger-carrying trains consisting of both passenger and freight cars. Freight cars, such as baggage cars, that are equipped with passenger-type braking and suspension systems, are considered to be passenger cars when utilized in passenger service.

**mixed waste**

Under the Federal Solid Waste Disposal Act: Waste that contains both hazardous waste and source, special nuclear, or byproduct material subject to the Atomic Energy Act of 1954.

**mixing depth**

The unstable atmospheric layer that extends from the surface up to the base of an inversion.

**mixing zone**

A term used to represent the volume of receiving water (e.g., river, stream) which is

permitted for mixing of the discharge with the receiving water.

**mixture**

(1) *General*. A heterogeneous association of substances which cannot be represented by a chemical formula. (2) *Federal Toxic Substances Control Act (TSCA)*. Any combination of two or more chemical substances if the combination does not occur in nature and is not, in whole or in part, the result of a chemical reaction. Such term does include any combination which occurs, in whole or in part, as a result of a chemical reaction if none of the chemical substances comprising the combination is a new chemical substance and if the combination could have been manufactured for commercial purposes without a chemical reaction at the time the chemical substances comprising the combination were combined.

**mixture rule**

Used to determine the hazardous nature of a waste product. Although the EPA has specifically excluded numerous chemical mixtures from this rule, it is still generally true that any mixture of a listed hazardous waste with another non-hazardous waste will render the entire volume of the waste product hazardous and subjected to regulation.

**MK-I, II**

A small commercial exercise device flown in earth orbit on Skylab for exercising arm and back muscles. Also called *mini-Gym*.

**MKS System**

See *meters, kilograms and seconds system*. See also *basic units*.

**mL**

Milliliter (0.001 liter or 1000 microliters (L)).

**M<sub>L</sub>**

See *local magnitude*.

**MLD**

See *minimum lethal dose*.

**MLS**

See *microwave landing system*.

**mm**

Millimeter(s).

**mm<sup>2</sup>**

Square millimeters.

**mm<sup>3</sup>**

Cubic millimeters.

**mm Hg**

See *millimeter of mercury*.

**MM**

See *middle marker*.

**MMA welding**

Manual metal arc welding.

**mmad**

See *mass median aerodynamic diameter*.

**mmcf**

Million cubic feet.

**MMH**

See *manual materials handling*.

**MMMF**

See *manmade mineral fibers*.

**mmol**

Millimole.

**MMPA**

Marine Mammal Protection Act of 1972.

**MMVF**

See *manmade vitreous fiber*.

**mmx**

See *multimedia extension*.

**M'Naghten rule**

Rule of law that states: "To establish a defense on the ground of insanity, it must be clearly proved that at the time of committing the act the party accused was laboring under such a defect of reason from disease of the mind as not to know the nature or quality of the act he was doing, or, if he did know it, that he did not know he was doing what was wrong."

**mnemonic**

Any formal technique for aiding in memory storage or recall.

**MNPS**

See *minimum navigation performance specifications*.

**MOA**

Memorandum of agreement. See *memorandum of understanding*. See also *military operations area*.

**mobile**

Having the freedom or ability to physically

move about from one location to another through relatively independent means.

**mobile home**

A housing unit built on a movable chassis and moved to the site. It may be placed on a permanent or temporary foundation and may contain one room or more. If rooms are added to the structure, it is considered a single-family housing unit. A manufactured house assembled on site is a single-family housing unit, not a mobile home.

**mobile home park**

An area maintained for the parking of inhabited mobile homes.

**mobile source**

A moving producer of air pollution, mainly forms of transportation such as cars, trucks, motorcycles, airplanes, etc.

**mobile x-ray**

X-ray equipment mounted on a permanent base with wheels and/or casters for moving while completely assembled.

**mobility aid**

Any physical device which enhances one's mobility, especially with regard to the handicapped.

**mobility analysis**

A determination of which employees have the skills, training, experience, or other capability to move to other jobs if it becomes necessary.

**mockup**

A full-scale, representative physical layout of a workstation, equipment, or situation used for training or as a design tool.

**modal**

See *mode*.

**modal share**

The percentage of total freight moved by a particular type of transportation.

**modal split**

(1) The proportion of total person trips that uses each of various specified modes of transportation. (2) The process of separating total person trips into the modes of travel used. (3) A term that describes how many people use alternative forms of transportation. It is frequently used to describe the percentage of people who use private automobiles, as op-

posed to the percentage who use public transportation.

**modal time**

That element time which occurs with the highest frequency during a time study.

**modality**

Any sense, such as vision or hearing.

**mode**

(1) *Statistical Analysis*. The most common or most frequent value that appears during evaluation or observation of a sample population of values. (2) *Transportation*. Any of the following transportation methods: rail, highway, air, or water. Also, transportation planners, analysts, and decision makers refer to the means of transportation as a mode. (3) *Transit*. Service operated in a particular format. There are two types: fixed-route and non-fixed route. (4) *Aviation*. The letter or number assigned to a specific pulse spacing of radio signals transmitted or received by ground interrogator or airborne transponder components of the Air Traffic Control Radar Beacon System (ATCRBS) Mode A (military Mode 3) and Mode C (altitude reporting) are used in air traffic control.

**mode C intruder alert**

*Aviation*. A function of certain air traffic control automated systems designed to alert radar controllers to existing or pending situations between a tracked target (known instrument flight rules (IFR) or visual flight rules (VFR) aircraft) and an untracked target (unknown IFR or VFR aircraft) that require immediate attention/action. *See also conflict alert*.

**mode S**

*Aviation*. A secondary surveillance radar and communication system in which each aircraft is assigned a unique address code. Using this unique code, interrogations and other messages can be directed to a particular aircraft, and replies can be unambiguously identified.

**model**

A mathematical representation of real phenomena. It serves as a pattern from which interrelationships can be identified, analyzed, altered, or synthesized without distributing the real world situation. A mathematical and/or physical representation of real world phenomena which serves as a plan or pattern from

which interrelationships can be identified, analyzed, synthesized, and altered without disturbing real world processes.

**Model Accreditation Plan (MAP)**

Related to the accreditation of persons who inspect for the presence of asbestos, develop asbestos management programs, etc. under AHERA and ASHARA as they relate to public buildings.

**model bow**

*Maritime*. A shaped, pointed bow.

**model plant**

A description of a typical but theoretical plant used for developing economic, environmental impact, and energy impact analyses as support for regulations or regulatory guidelines. It is an imaginary plant, with features of existing or future plants used to estimate the first step in exploring the economic impact of a potential NSPS.

**Model Rules of Professional Conduct**

Rules that were adopted by the American Bar Association in 1983, with technical amendments adopted in 1987, which provide comprehensive treatment of professional conduct in the form of rules as to what an attorney may and may not do in dealing with the court, opposing counsel, his/her client, and third persons. These Rules, which replace the former American Bar Association (ABA) Code of Professional Responsibility, have been adopted by many states (usually by the state supreme court) to govern the conduct of attorneys admitted to practice in the state.

**model year**

The year in which the particular style or design of vehicle was introduced or manufactured.

**modeling**

An investigative technique using a mathematical or physical representation of a system or theory that accounts for all or some of its known properties. Models are often used to test the effect of changes of system components on the overall performance of the system.

**modem**

Modulator/demodulator. A device employed to transform signals for transmission of information and data by telephone lines. A

communication device that allows information to be exchanged between computers via telephone lines.

**moderate work**

That level of work activity which has a gross metabolic cost of 180–280 calories per square meter of skin surface per hour.

**moderator**

(1) *General*. In arbitration, or during formal proceedings of any nature, an unbiased person responsible for ensuring the proceedings adhere to a pre-established schedule or agenda.  
(2) *Nuclear*. A material, such as beryllium, graphite (carbon), or water, which is capable of reducing the speed of neutrons, thereby increasing the likelihood for them to produce fission in the nuclear reactor.

**modification**

According to the Federal Clean Air Act: Any physical change in, or change in the method of operation of, a stationary source which increases the amount of any air pollutant emitted by such source or which results in the emission of any air pollutant not previously emitted. Any change in, or change in the method of operation of, a major source which increases the actual emissions of any hazardous air pollutant emitted by such source by more than a de minimis amount or which results in the emission of any hazardous air pollutant not previously emitted by more than a de minimis amount.

**modified Cooper-Harper Scale**

*See Cooper-Harper Scale, modified.*

**Modified Mercalli Intensity Scale**

An earthquake intensity scale adopted in 1931 that divides the effects of an earthquake into twelve categories, from I (not felt by people) to XII (damage total).

**Modified Rhyme Test**

A multiple choice test in which an individual is to select the word he/she believes he/she heard spoken from a selection of rhyming alternatives.

**modular**

*See module.*

**modular design**

Consisting of modules.

**modular workstation**

A workstation which may be assembled from modular components in a variety of different configurations. *See also cluster workstations.*

**modulation**

The variation in value of some parameter characterizing a periodic oscillation.

**module**

A standard unit which may serve as a building block for larger structures.

**modulus**

The numerical value assigned to a standard stimulus, against which other stimuli are judged and assigned relative values.

**modus operandi**

Method of operating or doing things (M.O.). The term used by the police and criminal investigators to describe the particular method of a criminal's activity. It refers to the pattern of criminal behavior so distinct that separate crimes or wrongful conduct are recognized as the work of the same person.

**moist adiabatic rate**

The rate of change of temperature in a rising or descending saturated air parcel. The rate of cooling or warming varies but a common value of 6°C per 100 meters (3.3°F per 1000 feet) is used.

**moisture vapor transmission rate**

The mass of water vapor passing through a specified area of one or more fabrics per unit time.

**Mojave Block**

The tectonic region located between the Garlock fault and the San Andreas fault, and extending eastward roughly to the California-Arizona (and California-Nevada) border.

**mol**

Molecular weight expressed in grams.

**molal**

A solution containing one mole of solute per liter of solution.

**molar volume**

The volume occupied by a gram mole of a substance in its gaseous state. This is equal to 22.414 liters at standard conditions (temperature of 0°C and 760 mm Hg pressure) and to 24.465 liters at normal temperature and pres-

sure (25°C and 760 mm Hg) in industrial hygiene work.

**mold**

See *fungus*.

**mole**

The basic measure of the amount of any substance. The mole has been defined to be the precise number of elementary entities, as there are atoms in exactly 0.012 kilograms (12.0 grams) of  ${}^{12}\text{C}$ . When the mole is used, the specific elementary entities must be specified; however, they may be atoms, molecules, ions, electrons, protons, neutrons, other particles, or any specified groupings of such particles. In general, one mole of any substance will contain Avogadro's Number,  $N_A$ , of atoms, molecules, or particles of some sort. Avogadro's Number is  $6.022 \times 10^{23}$ . See also *gram-mole* or *gram molecular weight*.

**mole percent**

The ratio of the number of moles of one substance to the total number of moles in a mixture of substances, multiplied by 100.

**molecular viscosity**

The small-scale internal fluid friction that is due to the random motion of the molecules within a smooth-flowing fluid, such as air.

**molecular weight**

The relative weight of a molecule of any substance as compared to the weight of an atom of carbon-12 (12.00000).

**molecule**

Ultimate unit of quantity of a chemical compound that can exist by itself and retain all the properties of the original substance.

**moment**

(1) A statistic measure, represented by the sum of the deviations from the mean, raised to some power, and divided by the number of terms used in accumulating the sum. (2) The tendency of a force to generate rotation in a body or torsion about an origin.

**moment arm**

That component of the vector representing the distance from a point of rotation which is perpendicular to the line of action of a force creating a torque.

**moment concept**

The idea that lifting stress is also a function of the bending moments at the spine, not just of the weight lifted.

**moment magnitude ( $M_w$ )**

The seismic moment of an earthquake, converted to a magnitude scale that roughly parallels the original Richter magnitude scale. However, since it is not based on the same measurement as Richter (local or surface-wave) magnitudes, the different magnitudes do not always agree, particularly for very large quakes. Because it relates directly to the energy released by an earthquake, it has become the standard in modern seismology. See also *local magnitude*, *surface-wave magnitude*, *seismic moment*, and *Richter scale*.

**moment of force**

See *torque*.

**moment of inertia**

The tendency of an object to retain its current rotational motion about an axis.

$$I = \sum m_i r_i^2 = \int r^2 dm$$

where:

$m$  = mass element

$r$  = distance from the axis of rotation

**momentary hold**

The maintenance of some position for a brief period of time (may be planned or unplanned).

**momentum**

The product of the mass of a body and its velocity, expressed in units of g-cm/s.

**monaural**

Indicating sound reception by only one ear.

**Monday morning heart attack**

Term used to describe heart attacks observed among dynamite workers. The effect is believed to be the result of the vasodilatory effect of ethylene glycol dinitrate and nitroglycerine which are used in dynamite manufacture.

**monel**

Term for a large group of corrosion-resistant alloys of predominantly nickel and copper with very small percentages of carbon, manganese, sulfur, and silicon. Some may contain aluminum, titanium, and cobalt.



**Monge's disease**

See *altitude sickness*.

**mongolism**

A congenital condition involving some degree of mental retardation and various physical malformations. The name is based on characteristic facial traits resembling somewhat those of persons of the Mongolian race. The term mongolism is now considered to be inaccurate and undesirable and has been replaced by the term Down's syndrome, or trisomy 21. The latter name refers to the presence of three twenty-first chromosomes, found in those with Down's syndrome, instead of the usual pair. See also *Down's syndrome*.

**monitor**

(1) *General*. To observe, listen to keep track, or exercise surveillance of ongoing progress, events, or situations by any appropriate means. (2) *Computing*. A peripheral device that allows the user of a CPU to directly view information and processing data. (3) *Aviation*. When used with communication transfer, "monitor" means to listen on a specific frequency and stand by for instructions. Under normal circumstances, communications are not to be established.

**monitor circuit**

A circuit used to verify the status of a system, such as an inhibit directly; control circuits can be monitored but they cannot serve as a monitor circuit.

**monitoring**

(1) *General*. Periodic or continuous surveillance or testing to determine the level of compliance with statutory requirements and/or pollutant levels in various media or in humans, animals, and other living things. (2) *Health Physics*. Periodic or continuous determination of the amount of ionizing radiation or radioactive contamination present in an occupied space.

**monitoring strategy**

The plan for implementing and carrying out a monitoring campaign to determine worker exposure to a contaminant, physical agent, etc.

**monitoring wells**

Wells drilled at a hazardous waste management facility or Superfund site to collect

groundwater samples for the purpose of physical, chemical, or biological analysis to determine the amounts, types, and distribution of contaminants in the groundwater beneath the site.

**monkey line**

*Maritime (slang)*. Small hand line used by a lockman to throw down or bring up the lock-line.

**mono**

Prefix denoting one, or single.

**monochromasia**

Total color blindness, in which all the red, green, and blue cones are missing or non-functional. The individual sees only shades of gray, lightness. Also known as *monochromasy*.

**monochromat**

An individual having monochromasia.

**monochromatic**

Having only one color, or producing light of only one wavelength.

**monochromatic radiation**

Electromagnetic radiation of a single wave length, or in which all the photons have the same energy (e.g., lasers).

**monochrome**

Pertaining to a screen display or hardcopy having a single color image against a background.

**monoclonal antibodies**

Molecules of living organisms that selectively find and attach to other molecules to which their structure conforms exactly. This could also apply to equivalent activity by chemical molecules.

**monocular**

Pertaining to only one eye, or vision using one eye.

**monocular visual field**

That part of the visual environment which can be seen by a single eye at any given instant with the head and eye stationary. See also *binocular visual field*.

**monodisperse aerosol**

A uniform aerosol with a standard deviation of 1.0. That is, the aerosol is all of one size.

**monoenergetic radiation**

Particulate radiation of a given type (alpha, beta, neutrons, etc.) in which all particles have the same energy.

**monomer**

A compound of relatively low molecular weight which, under certain conditions, either alone or with another monomer, forms various types and lengths of molecular chains called polymers or copolymers of high molecular weight. For example, styrene is a monomer that polymerizes readily to form polystyrene.

**mononucleosis**

Excess of mononuclear leukocytes in the blood. Infectious mononucleosis is an acute disease that causes changes in the leukocytes. The exact cause is not clearly understood, but it is widely considered to be a viral infection. Transmission of the disease is also not clearly understood. It occurs more frequently in the spring and affects primarily children and young adults. Generally, after an incubation period of uncertain duration (1 week to several weeks), headache, sore throat, mental and physical fatigue, severe weakness, and symptoms typical of influenza develop. Skin rashes may also occur.

**monoplegia**

The paralysis of a single limb, or a single muscle group.

**monorail**

(1) An electrical railway in which a rail car or train of cars is suspended from or straddles a guideway formed by a single beam or rail. Most monorails are either heavy rail or automated guideway systems. (2) A single rail on which a vehicle or train of cars travels.

**monorail vehicles**

Guided transit passenger vehicles operating on or suspended from a single rail, beam, or tube.

**monotone**

See *monotonic*.

**monotonic**

Pertaining to a function in which the dependent variable either continuously increases or continuously decreases in magnitude with an increase in the independent variable throughout the range of values under consideration,

such that each point for either function uniquely defines one point for the other.

**monotonic-decreasing**

Pertaining to a function in which the dependent variable continuously decreases in magnitude with an increase in the independent variable.

**monotonic-increasing**

Pertaining to a function in which the dependent variable continuously increases in magnitude with an increase in the independent variable.

**monotony**

The psychological state created by the lack of variety due to the repeated performance of a non-challenging task or long-duration task.

**monsoon depression**

A weak low-pressure area that tends to form in response to divergence in an upper-level jet stream. The circulation around the low strengthens the monsoon wind system and enhances precipitation during summer.

**monsoon wind system**

A wind system that reverses direction between winter and summer. Usually the wind blows from land to sea in winter and from sea to land in summer.

**Monte Carlo Method**

A probabilistic technique for obtaining solutions to problems by statistical sampling methods.

**Montreal Protocol**

The Montreal Protocol on Substances that Deplete the Ozone Layer, a protocol to the Vienna Convention for the Protection of the Ozone Layer, including adjustments adopted by Parties thereto and amendments that have entered into force.

**moonlight**

(1) The nighttime luminance created as a result of the sun's reflection on the lunar surface. (2) To work a second job.

**mooring**

(1) A floating ball, can, or other structure, which is permanently secured to the harbor bottom by means of a heavy chain and anchor system and to which vessels are made fast,

but able to swing in the wind and/or current.  
(2) The place where a craft may be secured to the ground, wharf, pier, post, or buoy.

**mooring cell**

A river-front structure generally composed of steel piling or a cluster of wooden piles used for securing barges along the bank at loading facilities. *See also* **dolphin**.

**MOP**

*See* **maximum operating pressure**.

**moped**

Includes motorized bicycles equipped with a small engine, typically 2 horsepower or less. Mini-bikes, dirt bikes, and trail bikes are excluded. Note that a motorized bicycle may or may not be licensed for highway use. *See also* **motorcycle** and **motor-driven cycle**.

**morale**

A measure of the level of confidence and enthusiasm of an individual or group.

**morbid**

Diseased.

**morbidity**

The condition of being sick or morbid. The ratio of sick to well persons in a population.

**morbidity rate**

The number of cases of a specific disease occurring in a population within a specified time interval.

**mordant**

A substance that is capable of binding a dye to a textile fiber.

**morning person**

*(slang)* An individual who typically wakes up easily in the morning, ready for the day, and has trouble staying up late at night.

**morphine**

An opium alkaloid, a narcotic analgesic and respiratory depressant, usually used as morphine sulfate.

**morphology**

Structural configuration. The science of the forms and structure of organized beings and other materials (e.g., objects).

**mortal**

Subject to death.

**mortality rate**

The number of deaths occurring per 1000 population in a specified time period. Also referred to as *death rate*.

**mortality tables**

A means of ascertaining the probable number of years any man or women of a given age and of ordinary health will live. A mortality table expresses, on the basis of the group studied, the probability that, of a number of persons of equal expectations of life who are living at the beginning of any year, a certain number of deaths will occur within that year. These tables are used by insurance companies to determine the premium to be charged for those in the respective age groups.

**MOST**

*See* **Maynard Operation Sequence Technique**.

**most harmful event**

*Transportation.* The event during a crash for a particular vehicle that is judged to have produced the greatest personal injury or property damage.

**most restrictive state**

*Rail Operations.* The mode of an electric or electronic device that is equivalent to a track relay in its deenergized position.

**mother-of-pearl clouds**

*See* **nacreous clouds**.

**motile**

Moving or having the power to move spontaneously.

**motion aftereffect**

Any illusion of continuing motion which begins on cessation or change of a particular motion.

**motion analysis**

The acquisition, processing, organization, and use of data obtained from human physical activity, whether of certain specific joints, body segments, or the body as a whole.

**motion cycle**

The entire set of physical activities required to perform a given work cycle one time.

**motion efficiency**

The concept that body motions in performing a task should be reduced to the minimal, simplest, least fatiguing possible set.

### **motion efficiency principles**

A set of some common sense or empirically determined concepts dealing with human movements for the industrial/manufacturing workplace to simplify and improve the effectiveness of manual work and minimize fatigue. General principles include

- a) use natural, rhythmic, easy movements
- b) establish habitual movements
- c) use both hands simultaneously in parallel motions, not sequential
- d) minimize movements
- e) involve the fewest body segments possible in performing the work
- f) distribute actions among the various muscles of the body
- g) use ballistic movements rather than slower, controlled movements
- h) use momentum to aid performance
- i) minimize momentum when muscular effort must be used to overcome it
- j) use continuous, curved movements, not straight lines involving rapid changes in direction

Also referred to as *principles of motion economy*, *principles for motion improvement*, and *characteristics of easy movement*. See also *workplace design* and *display-control layout*.

### **motion sickness**

A condition in which the signs or symptoms of nausea, vomiting, and/or physiological effects are produced by either real or perceived motion of the body or its surroundings. The discomfort is caused by irregular and abnormal motion that disturbs the organs of balance located in the inner ear.

### **motion study**

See *motion analysis*.

### **Motion Time Analysis (MTA)**

A predetermined motion time system

### **motions inventory**

The nature and quality of possible motions within the capabilities of an individual under specified circumstances.

### **motivation**

A psychophysiological construct which is involved in the initiation, direction, and sustenance of behavior by an individual or group toward accomplishing some goal.

### **motor**

Pertaining to the activation of muscles by efferent neurons or nerves.

### **motor activity**

Any pattern of muscular activity concerned with locomotion or the moving of a limb or body part.

### **motor bus**

(1) A rubber-tired, self-propelled, manually steered vehicle with fuel supply carried on board the vehicle. (2) Rubber-tired passenger vehicles that operate on roadways. Motor bus service implies fixed routes and schedules. See also *intercity bus* and *motorbus*.

### **motor bus, class A (>35 seats)**

Rubber-tired passenger vehicles powered by diesel, gasoline, battery, or alternative fuel engines contained within the vehicle. Class A motor buses are equipped with more than 35 seats.

### **motor bus, class B (25-35 seats)**

Rubber-tired passenger vehicles powered by diesel, gasoline, battery, or alternative fuel engines contained within the vehicle. Class B motor buses are equipped with 25 to 35 seats.

### **motor carrier**

(1) A for-hire motor carrier or a private motor carrier of property. The term "motor carrier" includes a motor carrier's agents, officers, and representatives as well as employees responsible for hiring, supervising, training, assigning, or dispatching of drivers and employees concerned with the installation, inspection, and maintenance of motor vehicle equipment and/or accessories. (2) An employer firm that is primarily engaged in providing commercial motor freight or long distance trucking or transfer services.

### **motor carrier of passengers**

A common, contract, or private carrier using a bus to provide commercial transportation of passengers.

### **motor-circuit switch**

See *switch (4)*.

### **motor-driven cycle**

A motorcycle with a motor that produces 5 brake horsepower or less. See also *moped* and *motorcycle*.

### **motor end plate**

See *end plate (1)*.

**motor fitness**

A measure of an individual's physical suitability for a particular task.

**motor freight transportation warehousing and stockyards**

Includes establishments that provide local or long-distance trucking or transfer services, warehousing and storage of farm products, furniture or other household goods, and commercial goods of a general nature. The operation of terminal facilities for handling freight, with or without maintenance facilities is also included. Stockyards, establishments that provide holding pens for livestock in transit, are included in this major group. These stock yards do not sell or auction livestock.

**motor gasoline**

A complex mixture of relatively volatile hydrocarbons, with or without small quantities of additives, obtained by blending appropriate refinery streams to form a fuel suitable for use in spark ignition engines. Motor gasoline includes both leaded and unleaded grades of finished motor gasoline, blending components, and gasohol. *See also fuel and gasohol.*

**motor home**

Includes self-powered recreational vehicles (RV) that are operated as a unit without being towed by another vehicle (e.g., a Winnebago motor home).

**motor homunculus**

A representation of the human body on the surface of the motor cortex, whose distribution is proportional to the density of innervation in various parts of the body.

**motor learning**

Any form of learning involving the coordinated activities of muscles.

**motor nerve**

An efferent nerve which provides motor innervation to a muscle.

**motor neuron**

An efferent neuron which sends or carries information toward a neuromuscular junction.

**motor point**

A location on the skin at which electrical stimulation will cause contraction of the underlying muscle.

**motor skill**

The ability to move some or all parts of the body in a coordinated fashion toward the performance of some task.

**motor unit**

The combination of a motor neuron, its axon, the neuronal terminal branches, and the muscle fibers they innervate.

**motor vehicle**

(1) Any self-propelled vehicle, truck, tractor, semitrailer, or truck-full trailers used for the transportation of freight over public highways. (2) A vehicle, machine, tractor, trailer, or semitrailer, or any combination thereof, propelled or drawn by mechanical power and used upon the highways in the transportation of passengers or property. It does not include a vehicle, locomotive, or car operated exclusively on a rail or rails, or a trolley bus operated by electric power derived from a fixed overhead wire, furnishing local passenger transportation similar to street-railway service. (3) Any mechanically or electrically powered device not operated on rails, upon which or by which any person or property may be transported upon a land highway. The load on a motor vehicle or trailer attached to it is considered part of the vehicle. *See also automobile, bus, car, minivan, semitrailer, taxi, tractor (or truck tractor), tractor-semitrailer, truck, van, and vehicle.*

**motor vehicle accident**

An unstable situation that includes at least one harmful event (injury or property damage) involving a motor vehicle in transport (in motion, in readiness for motion or on a roadway, but not parked in a designated parking area) that does not result from discharge of a firearm or explosive device and does not directly result from a cataclysm.

**motor vehicle chassis**

The basic operative motor vehicle, including engine, frame, and other essential structures and mechanical parts, but excluding body and all accessories and auxiliary equipment.

**motor vehicle in transport**

A motor vehicle in motion on the trafficway or any other motor vehicle on the roadway, including stalled, disabled, or abandoned vehicles.

**motor vehicle incidence rate**

A factor for rating the number of deaths from motor vehicular accidents by miles of vehicular travel.

**motor vehicle traffic accident**

An accident involving a motor vehicle in use within the right-of-way or other boundaries of a trafficway open for the use of the public.

**motor vessel**

Any vessel equipped with propulsion machinery (other than steam) more than sixty-five feet long.

**motorboat**

Any vessel equipped with propulsion machinery, not more than sixty-five feet in length.

**motorbus**

(1) Rubber-tired, self-propelled, manually steered bus with fuel supply on board the vehicle. Motor bus types include intercity, school, and transit. (2) Rubber-tired passenger vehicles which operate on roadways. Motorbus service implies fixed routes and schedules. *See also intercity bus, motor bus, school and other nonrevenue buses, and transit bus.*

**motorcycle**

(1) All two- or three-wheeled motorized vehicles. Typical vehicles in this category have saddle type seats and are steered by handle bars rather than a wheel. This category includes motorcycles, motor scooters, mopeds, motor powered bicycles, and three-wheeled motorcycles. (2) A two- or three-wheeled motor vehicle designed to transport one or two people, including motor scooters, mini-bikes, and mopeds. *See also moped and motor-driven cycle.*

**motorized vehicle**

Includes all vehicles that are licensed for highway driving. Specifically excluded are snow mobiles and mini-bikes.

**mottled**

Covered with spots or streaks of different shades or colors.

**MOU**

*See memorandum of understanding.*

**mountain and valley breeze**

A local wind system of a mountain valley that blows downhill (*mountain breeze*) at night and uphill (*valley breeze*) during the day.

**mountain sickness**

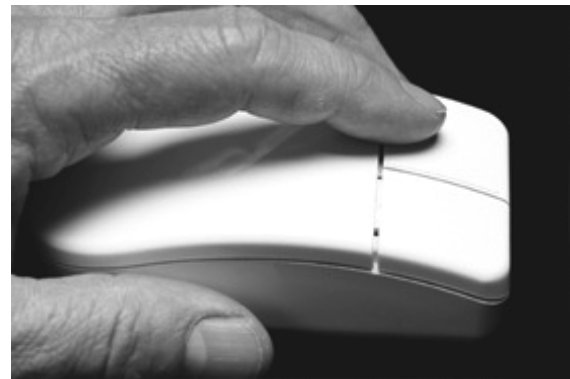
*See altitude sickness.*

**mounting height**

That vertical height above the floor, table, ground, or other surface at which an illumination source is located.

**mouse**

A computer input device having one or more buttons and capable of two-dimensional rolling motion which can drive a cursor on the display and perform a variety of selection options or commands.



*The typical (two-button) computer mouse*

**mouse keys**

An interactive feature for handicapped individuals which will allow them to use certain keys on a computer keyboard to control a cursor normally operated by a mouse.

**mouth**

(1) *Anatomy.* An opening, especially the oral cavity, forming the beginning of the digestive system in which the chewing of food takes place. The mouth is also the site of the organs of taste and the teeth, tongue and lips. Not only is the mouth the entrance to the body for food and sometimes air, but it is a major organ of speech and emotional expression. (2) *Geography.* The exit or point of discharge of a stream into another stream, lake, or sea.



**mouth stick**

A rod for allowing a quadriplegic or other handicapped individual to operate various forms of equipment by holding the device in his/her mouth and using pressure to operate the equipment.

**mouth-to-mouth resuscitation**

A method of artificial respiration in which the rescuer covers the victim's mouth with his/her own and breaths out vigorously in an attempt to resuscitate the person.

**movable bridge**

That section of a structure bridging a navigable waterway so designed that it may be displaced to permit passage of traffic on the waterway.

**movable bridge locking**

The rail locks, bridge locks, bolt locks, circuit controllers, and electric locks used in providing interlocking protection at a movable bridge.

**movable dam**

A dam that is predominantly constructed of a series of wickets which may be raised or lowered as water stages dictate for passing water through the dam. These wickets may all be lowered at the bed of the river and vessels may pass over the dam during periods of high water. The dam and/or river is then said to be "open."

**move**

(1) To execute one or more isotonic muscular contractions, resulting in a change in position of one or more parts of the body. (2) To transfer (cut and paste) a segment of text, graphics, or other material in a computer system from one location to another. (3) A physical basic work element involving motion of the hand carrying one or more objects.

**movement area**

*Aviation.* (1) The runways, taxiways, and other areas of an airport/heliport which are utilized for taxiing/hover taxiing, air taxiing, takeoff, and landing of aircraft, exclusive of loading ramps and parking areas. At those airports/heliports with a tower, specific approval for entry onto the movement area must be obtained from ATC. (2) That part of an aerodrome to be used for the takeoff, landing and taxiing of aircraft, consisting of the maneuvering area and the apron(s).

**movement disorder**

Any pathological condition which results in an abnormal deviation from an intended movement, an inability to execute a desired movement, or an undesired involuntary movement.

**moving average**

An arithmetic mean based on a fixed number of samples over time, in which as each new sample is added, the oldest sample is dropped.

**moving target indicator**

*Aviation.* An electronic device which will permit radar scope presentation only from targets which are in motion. A partial remedy for ground clutter.

**mp**

See *melting point*.

**MPC**

See *maximum permissible concentration*.

**MPD**

See *maximum permissible dose*.

**MPE**

See *maximum permissible exposure*.

**MPG**

See *miles per gallon*.

**MPI**

See *mass psychogenic illness*.

**MPL**

See *maximum permissible lift*.

**MPO**

See *Metropolitan Planning Organization*.

**mppcf**

Millions of particles per cubic foot (of air) (mppcf x 35.3 = million particles per cubic meter = particles per cubic centimeter).

**MPRSA**

Marine Protection, Research, and Sanctuaries Act of 1972 (Federal).

**mps**

Meter(s) per second.

**mR**

Milliroentgen(s).

**mrads**

Millirad(s).

**mrem**  
Millirem(s).

**mrem/h**  
Millirem(s) per hour.

**MRI**  
See *Magnetic Resonance Imaging*.

**MRP**  
See *material requirements planning*.

**M<sub>s</sub>**  
See *surface-wave magnitude*.

**MS**  
Mass spectrometer. See also *multiple sclerosis*.

**MSA**  
See *Metropolitan Statistical Area*. See also *minimum safe altitude*.

**MSAW**  
See *minimum safe altitude warning*.

**MSD**  
Musculoskeletal disorder. See also *Master Standard Data*.

**MSDS**  
See *material safety data sheet*.

**MSHA**  
See *Mine Safety and Health Administration*.

**mSv**  
Millisievert(s).

**mT**  
Millitesla.

**MT**  
See *metric ton*.

**MTA**  
See *Motion Time Analysis*.

**MTBF**  
See *mean time between failures*.

**MTD**  
Maximum tolerated dose.

**MTM**  
See *Methods Time Measurement*.

**MTTF**  
See *mean time to failure*.

**mu locomotive**  
A multiple-operated electric locomotive described in 49 CFR 229.4 paragraph (i)(2) or (3).

**MUC**  
See *maximum use concentration*.

**muck soils**  
Earth made from decaying plant materials.

**mucoiliary clearance**  
Removal of materials from the respiratory tract via cilia action.

**mucosa**  
See *mucous membrane*.

**mucous membrane**  
Membrane lining all channels in the body that communicate with the air, such as the respiratory tract, stomach, urinary tract, intestines, and the alimentary canal (digestive tract), the glands of which secrete mucus. Also referred to as *mucosa*. See also *mucus*.

**mucus**  
The viscous suspension of mucin, water, cells, and inorganic salts secreted as a protective lubricant coating by glands in the mucous membranes. See also *mucous membrane*.

**muffler**  
In acoustics, a device for reducing noise emissions from engine exhausts, vents, etc. Two types of mufflers, namely, the *dissipative* and *reactive*, are available.

**mulch**  
A layer of material (wood chips, straw, leaves, etc.) placed around plants to hold moisture, prevent weed growth, protect the plants, and enrich the soil.

**mule**  
Small tractor used in warehouse to pull two-axle dollies, also yard tractor.

**mule train**  
The maneuver of towboats in ice-choked channels whereby the tow is strung out single file, the barges fitted with loose couplings or lashings, and the tow pulled behind the towboat. Also known as *string out*.

**multicell storm**  
Thunderstorms in a line, each of which may be in a different stage of development.

**multicom**

*Aviation.* A mobile service not open to public correspondence used to provide communications essential to conduct the activities being performed by or directed from private aircraft.

**multi-factor plan**

An incentive plan in which employee awards are based on more than one factor.

**multilevel sampling**

The selection of a primary, large or high level unit, followed by secondary, tertiary, et cetera units, each selected from within the next higher level unit.

**multilimb coordination**

The ability to meaningfully integrate the movements of two or more limbs to fulfill some purpose such as manipulating a control, an object, or locomotion.

**multimedia**

Two or more elements, such as sound and animation, or video in a computer program.

**multimedia extension (mmx)**

In computing, advanced processor functionality for running multimedia programs.

**multimedia inspection**

*Environmental.* Inspection strategy sometimes employed by the Federal Environmental Protection Agency (EPA), as well as many state agencies, whereby a number of inspectors each with an expertise in a given environmental subject area (e.g., CAA, CWA, RCRA, etc.) conduct an inspection simultaneously at the same location, thereby effectively covering all applicable aspects of environmental compliance during a single inspection.

**multimodal transportation**

Often used as a synonym for intermodalism. Congress and others frequently use the term intermodalism in its broadest interpretation as a synonym for multimodal transportation. Most precisely, multimodal transportation covers all modes without necessarily including a holistic or integrated approach. *See also intermodal.*

**multiple activity process chart**

A process chart showing the chronological activities involving a work system, with each component of the system allocated a separate vertical column to show relative or coordinated activities.

**multiple chemical sensitivity**

Term used by some people to refer to a condition in which a person is considered to be sensitive to a number of chemicals at very low concentrations. There are a number of views about the existence, potential causes, and possible remedial actions regarding this phenomenon.

**multiple correlation**

The degree of relationship between a criterion variable and two or more predictor variables.

**multiple correlation coefficient (R)**

A numerical value representing the correlation between a set of two or more predictor variables and one criterion variable. Synonymous with *coefficient of multiple correlation* and *multiple R*.

**multiple machine work**

A work assignment which has a worker attending to two or more machines.

**multiple myeloma**

A malignant neoplasm of plasma cells usually arising in the bone marrow and manifested by skeletal destruction, pathologic fractures, and bone pain.

**multiple R**

*See multiple correlation coefficient.*

**multiple receptacle**

*See receptacle (3).*

**multiple regression**

The analysis or use of the combined and individual contributions from more than one predictor variable for predicting the value of a single criterion variable.

**multiple runway**

The utilization of a dedicated arrival runway(s) for departures and a dedicated departure runway(s) for arrivals when feasible to reduce delays and enhance capacity.

**multiple sclerosis (MS)**

A disease resulting in demyelination within the CNS and the corresponding movement, speech, and other difficulties.

**multiple use**

Under the Federal Land Policy and Management Act of 1976: The management of the public lands and their various resource values so that they are utilized in the combination that will best meet the present and future needs of the American people.

Making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions. The use of some land for less than all of the resources. A combination of balanced and diverse resource uses that takes into account the long-term needs of future generations for renewable and nonrenewable resources, including, but not limited to, recreation, range, timber, minerals, watershed, wildlife and fish, and natural scenic, scientific and historical values, and harmonious and coordinated management of the various resources without permanent impairment of the productivity of the land and the quality of the environment with consideration being given to the relative values of the resources and not necessarily to the combination of uses that will give the greatest economic return or the greatest unit output.

**multipurpose dry chemical**

A dry chemical which is approved for use on Class A, Class B and Class C fires.

**multipurpose passenger vehicle**

A motor vehicle with motive power, except a trailer, designed to carry 10 persons or less which is constructed either on a truck chassis or with special features for occasional off-road operation.

**multisensory**

Combining or related to more than one sensory modality.

**multistop body**

Fully enclosed truck body with driver's compartment designed for quick, easy entrance and exit.

**multitasking**

(1) The processing of more than one dataset or application at a time, usually with the operator working directly only on one application. (2) The assignment of a worker to more than one task or job.

**multi-trailer five or less axles truck**

All vehicles with five or less axles consisting of three or more units, one of which is a tractor or straight truck power unit.

**multi-trailer seven or more axles truck**

All vehicles with seven or more axles consisting of three or more units, one of which is a tractor or straight truck power.

**multi-trailer six axle truck**

All six-axle vehicles consisting of three or more units, one of which is a tractor or straight truck power-unit.

**multivariate**

- (1) Having more than one dependent variable.
- (2) Pertaining to more than one variable.

**multivariate analysis**

Any statistical analysis involving more than one independent variable and/or more than one dependent variable.

**multivariate analysis of variance (MANOVA)**

An analysis involving two or more of both independent and dependent variables.

**mumps**

A communicable viral disease that attacks one or both of the parotid glands, the largest of the three pairs of salivary glands. Occasionally, the submaxillary glands are also affected. Although older people may contract the disease, mumps usually strikes children between the ages of 5 and 15. Mumps is spread by droplet infection. The disease is contagious in the infected person from 1 to 2 days before symptoms appear until 1 or 2 days after they disappear. The incubation period is usually 18 days, although it may vary from 12 to 26 days. One attack usually gives immunity. Often, the first noticeable symptoms of mumps is a swelling of one of the parotid glands. The swelling is frequently accompanied by pain and tenderness. Occasionally, acid foods and beverages may cause an increase in the pain. In the first stage of mumps, the person may have a fever of 100° to 104°F. Other common symptoms include loss of appetite, headache, and back pain. Also called *epidemic parotitis*.

**municipality**

A legally incorporated or duly authorized association of inhabitants of a limited area for local governmental or other public purposes.

**Munsell chromas**

Saturation in the Munsell color system.

**Munsell color system**

A color ordering system for surfaces which divides colors into perceptually uniform seg-

ments for ordering and specifying with regard to hue, chroma (saturation), and value (lightness).

### **Munsell value**

A measure of lightness in the Munsell color system, on a scale ranging from 1 (black) to 10 (white).

### **murder**

The unlawful killing of a human being by another with malice aforethought, whether express or implied (the crime is defined by statute in most states).

### **muscle**

(1) A structure composed of a mass of muscle tissue, usually enclosed by some type of sheath, and forming a distinct unit. Muscles are responsible for locomotion and play an important part in performing vital body functions. They also protect the contents of the abdomen against injury and help support the body. Muscle fibers range in length from a few hundred thousandths of an inch to several inches. They also vary in shape, and in color from white to deep red. Each muscle fiber receives its own nerve impulses, so that fine and varied motions are possible. Each has its small stored supply of glycogen which it uses as fuel for energy. Muscles, especially the heart, also use free fatty acids as fuel. At the signal of an impulse travelling down a nerve, the muscle fiber changes chemical energy into mechanical energy, and the result is muscle contraction. Some muscles are attached to bone by tendons. Other are attached to other muscles, and to the skin – producing the smile, the wink, and other facial expressions, for example. All or part of the walls of hollow internal organs, such as the heart, stomach, intestines, and blood vessels, are composed of muscles. The last stages of swallowing and of peristalsis are actually series of contractions by the muscles in the walls of the organ involved. There are three types of muscle: involuntary, voluntary, and cardiac. They are composed, respectively, of smooth, striated (or striped), and mixed smooth and striated. Muscles that are not under the control of the conscious part of the brain are called involuntary muscles. They respond to nerve impulses of the autonomic nervous system. These involuntary muscles are countless short-fibered, or smooth, muscles of

the internal organs. They power the digestive tract, the pupils of the eyes, and all other involuntary mechanisms. The muscles controlled by the conscious part of the brain are called voluntary muscles, and are striated. These are skeletal muscles that enable the body to move, and there are more than 600 of them in the human body. The fibers of voluntary muscles are grouped together in a sheath of muscle cells. Groups of fibers are bundled together into fascicles and the bundles are surrounded by a tough sheet of connective tissue to form a muscle group like the biceps. Unlike the voluntary muscles, which can remain in a state of contraction for long periods without tiring and are capable of sustained rhythmic contractions, the voluntary muscles are readily subject to fatigue. They also differ from the involuntary muscles in their need for regular and proper exercise. The third kind of muscle, cardiac muscle, or the muscle of the heart, is involuntary and consists of striated fibers different from voluntary muscle fibers. The contraction and relaxation of cardiac muscle continue at a rhythmic pace until death, unless the muscle is injured in some way. No muscle stays completely relaxed, and as long as a person is conscious, it remains slightly contracted. This condition is called *tonus*, or tone. It keeps bones in place and enables a posture to be maintained. It allows a person to remain standing, sitting up straight, kneeling, or in any other natural position. Muscles also have elasticity. They are capable of being stretched and of performing reflex actions. This is made possible by the motor and sensory nerves which serve the muscles. (2) See *muscle tissue*.

### **muscle action**

Any muscle activity which results in a change in length or in an increase in tension in the muscle.

### **muscle capacity**

See *muscular endurance*.

### **muscle fatigue**

See *muscular fatigue*.

### **muscle fiber**

A muscle cell. See also *intrafusal fiber* and *extrafusal fiber*.

**muscle group**

A collection of individual skeletal muscles which have similar innervation and perform a similar/common/related function.

**muscle hemoglobin**

See *myoglobin*.

**muscle testing**

Any procedure intended to measure the performance of a restricted number of muscles on some graded basis.

**muscle tissue**

An irritable, contractile, extensible elastic tissue composed of long tubular or spindle-shaped cells.

**muscle tone**

A state of continuous mild muscle contraction.

**muscular endurance**

The maximum time under stated conditions which a muscle or muscle group can maintain a given measure of external force.

**muscular fatigue**

The buildup of lactic acid in muscle tissue due to prolonged heavy exertion.

**musculoskeletal system**

Pertaining to or comprising the skeleton and the muscles.

**musculospiral nerve**

See *radial nerve*.

**mustache**

That long-term accumulation of hair growth which originates on the face generally above the upper lip, medial to the lip margins, and beneath the nasal septum base.

**MUSYA**

Multiple-Use Sustained-Yield Act of 1960 (Federal).

**mutagen**

A chemical substance that has the ability to produce a change (*mutation*) in the genetic composition of the DNA in a cell. The change is capable of being passed on to succeeding generations. Mutations can also be brought about by radiation exposures.

**mutagenesis**

The process in which normal cells are converted into genetically abnormal cells.

**mutagenic**

An agent that induces genetic mutation.

**mutagenicity**

The property of being able to induce genetic mutation.

**mutant**

An individual who has been altered as a result of mutation (i.e., from a change in the character of a gene that is perpetuated in the subsequent division of the cell in which it occurs).

**mutate**

To bring about a change in the genetic constitution of a cell by altering its DNA. In turn, "mutagenesis" is any process by which cells are mutated.

**mutation**

A change in the characteristics of an organism produced by an alteration of the DNA of living cells.

**mutism**

Inability or refusal to speak. In almost all cases, mutes are unable to speak because their deafness has prevented them from hearing the spoken word.

**mutuality of obligation**

Mutuality of obligation requires that unless both parties to a contract are bound, neither is bound.

**mV**

Millivolt(s).

**MVA**

See *minimum vectoring altitude*.

**MVC**

See *maximal voluntary contraction*.

**mw**

Molecular weight.

**M<sub>w</sub>**

See *moment magnitude*.

**MWE**

See *megawatt electric*.

**myalgia**

Pain in a muscle or muscles.

**myasthenia**

Muscular debility or weakness.

**mycetoma**

See *maduromycosis*.



**mycotoxin**

A toxin produced by a mold growing on a specific substrate, many of which are known to be potent carcinogens.

**myelin**

The white, fatty substance that forms a sheath around certain nerve fibers.

**myelin sheath**

The collective concentric wrapping of the membranes of many neural support cells around an axon at intervals along its length. Each support cell forms one internode and permits saltatory conduction.

**myelogenous**

Produced in the bone marrow.

**myelogenous leukemia**

Leukemia arising from myeloid tissue.

**myeloid tissue**

Tissue pertaining to, derived from, or resembling bone marrow.

**myeloma**

A tumor composed of cells of the type normally found in the bone marrow.

**myelotoxicity**

Deterioration of the bone marrow structure that results in dangerous changes in blood composition.

**myocarditis**

Inflammation of the muscular walls of the heart. The condition may result from bacterial or viral infections or it may be a toxic inflammation caused by drugs or toxins from infectious agents. Other systemic diseases that may be accompanied by myocarditis are trichinosis, serum sickness, rheumatic fever, and collagen diseases. In many cases the etiology is unknown. The most common symptoms of acute myocarditis are pain in the epigastric region or under the sternum, dyspnea, and cardiac arrhythmia. If the condition persists and becomes chronic, there is pain in the right upper quadrant of the abdomen, owing to hepatic congestion. The latter symptom is a sign of left ventricular failure and often is accompanied by edema and other signs of congestive heart failure.

**myocardium**

The muscular substance of the heart.

**myoclonus**

An isolated involuntary contraction of one or more muscles.

**myoelectric limb**

A limb prosthesis which senses muscle electrical activity in the proximal remaining portion of the limb or the trunk region and uses those signals to drive one or more motors to operate the prosthesis.

**myofibril**

The basic unit of contractile structure in skeletal muscle cells.

**myoglobin**

A protein in muscle which may function as an oxygen carrier. Also called *muscle hemoglobin*.

**myography**

See *electromyography*.

**myoma**

A tumor formed of muscular tissue. Myomas are often multiple, although a single tumor may occur. They are usually small but may grow quite large and occupy most of the uterine wall.

**myoneural junction**

See *neuromuscular junction*.

**myopia**

A refraction error in which parallel light rays from a distant object are focused anterior to the retina under relaxed accommodation. The error of refraction is caused by rays of light entering the eye parallel to the optic axis and brought to a focus in front of the retina as a result of the eyeball being too long from front to back. Hence, vision for near objects is better than for far. Also known as *nearsightedness* for this reason.

**myositis**

Inflammation of a voluntary muscle.

# N

## N

(1) See *Newton*. (2) Normal (solution).

### N589

A classical acoustics modeling software package.

### NAAQS

See *National Ambient Air Quality Standards*.

### NACE

National Association of Corrosion Engineers.

### NACOSH

See *National Advisory Committee on Occupational Safety and Health*.

### nacreous clouds

Clouds of unknown composition that have a soft, pearly luster and that form at latitudes about 25 to 30 km above the earth's surface. They are also called *mother-of-pearl clouds*.

### nail

(1) A slender piece of metal, usually pointed at one end and broadened at the other, used for driving into or through wood or other materials so as to hold or fasten one piece to another or to project a peg. (2) A rod of metal, bone, or other material used for fixation of the ends of fractured bones. (3) The elastic protein tissue covering the dorsal portion of the terminal phalanges of the hand and foot. The nails are part of the outer layers of the skin. They are composed of keratin, the substance that gives the skin its toughness. The appearance of the nails can sometimes indicate general physical health. For example, any change in the basic structure, shape, or appearance of the nails (such as softness, brittleness, furrowing, or speckling) may be a symptom of a disease affecting the whole body. Marked pallor of the nails may suggest anemia. In certain cases of hemiplegia and poliomyelitis the nails cease to grow. Curing the disease will cure the condition. Certain disorders affect the nails themselves. They are readily exposed to outside sources of infection and are particularly vulnerable to injury in the course of daily life. Many of the diseases that afflict the skin may also affect the nail bed and be aggravated by the confining presence of the nail. Congenital defects and metabolic

disturbances may affect the nails. Most infections involving the nails originate in the folds of tissue around them. Inflammation of this area is called paronychia. It is a fairly common infection by staphylococci, streptococci, or other bacteria or fungi, and causes painful swelling around the nail, with red, shiny skin. If untreated, paronychia may spread to the nail bed and cause inflammation there. This condition is known as onychia, and is more serious. The bacteria grow under the nail and can cause severe inflammation and pain. Onychia may also arise when the nail is injured and bacteria or fungi gain entrance to the tissue underneath. If the organisms that penetrate the nail produce pigments, the nail may change color as a result. In extreme cases onychia may also cause the nail to separate from its bed. Among the diseases from which paronychia and onychia may result are tuberculosis, diphtheria, and syphilis, and also skin diseases such as psoriasis, fungus diseases, and contact dermatitis. Dermatitis is the most common disorder to involve the nails and often leads to the complete loss of the nail. After treatment the nail will generally grow back, but if the matrix is severely damaged a new nail may be deformed or may fail to grow. See also *finger nail* and *toe nail*.

### nail body

The exposed portion of the nail.

### nail fold

The rounded skin at the lateral and proximal portions of a nail.

### nail groove

The depressed region between the nail and the nail fold.

### nail matrix

That structure beneath the skin from which nail tissue is formed.

### nail root

That portion of the nail which lies beneath the skin between the lunula and the nail matrix.

### NAM

National Association of Manufacturers.

### named insured

In insurance, the person specifically designated in the policy as the one protected and,

commonly, it is the person with whom the contract of insurance has been made.

**NAMS**

National Air Monitoring Station.

**nano-**

Prefix indicating one-billionth or  $10^{-9}$  of the basic unit.

**nanogram**

One billionth of a gram.

**nanometer**

The billionth part of a meter.

**NANPCA**

Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 (Federal).

**nap**

(1) A brief period of sleep. (2) The short, small fibers on a fabric surface.

**nape**

The back of the neck. Technically referred to as the *nucha*.

**napestrap**

A strap-like device extending from a piece of headgear over the nape of the neck to assist in headgear retention.

**naphtha**

A generic term applied to a petroleum fraction with an approximate boiling range between 122 and 400 degrees Fahrenheit.

**naphtha-type jet fuel**

*American Petroleum Institute (API)*. A fuel in the heavy naphtha boiling range with an average gravity of 52.8 degrees and 20 to 90 percent distillation temperatures of 290 degrees to 470 degrees Fahrenheit, meeting Military Specification MIL-T-5624L (Grade JP-4). JP-4 is used for turbojet and turboprop aircraft engines, primarily by the military. Excludes ram-jet and petroleum rocket fuels.

**napier**

See *néper*.

**narcoanalysis**

Process whereby a subject is put to sleep, or into a semisomnolent state by means of chemical injections and then interrogated while in this dreamlike state.

**narcolepsy**

A disorder in which an individual experiences numerous severe occasions of sleepiness during the day.

**narcosis**

A reversible stupor or state of unconsciousness that may be produced by some chemical substances.

**narcotic**

Compound that produces stupor. Many opium derivatives are examples of strong narcotics. Narcotics can affect the central nervous system (CNS) and the gastrointestinal tract. The CNS effects include analgesia, euphoria, sedation, respiratory depression, and antitussive action. Chronic use of narcotics develops tolerance to the compounds and physical dependence. Medically, the term narcotic includes any drug that has this effect. By legal definition, however, the term refers to habit-forming drugs, for example, opiates such as morphine and heroine and synthetic drugs such as mepredine (Demerol). Narcotics can be legally obtained only with a doctor's prescription. The sale or possession of narcotics for other than medical purposes is strictly prohibited by federal, state, and local laws.

**naris**

(1) The passage at either the anterior or posterior nasal cavity. (2) An opening into the nasal cavity on the exterior of the body (anterior or external naris) or into the nasopharynx (posterior naris).

**narrative evidence**

Testimony from a witness which he/she is permitted to give without the customary questions and answers (e.g., when a witness explains in detail what happened without interruption).

**narrow band**

Pertaining to a frequency band consisting of a few hertz on either side of a center frequency.

**narrow band analysis**

A type of frequency analysis in which sound intensity level measurements are restricted to a few hertz on either side of a center frequency.

**narrow channel**

A channel with very little room to spare.

**narrow railway gauge**

Distance between the rails of a track less than 4 ft 8.5 inches.

**NAS**

National Academy of Sciences. *See also National Airspace System.*

**NASA**

National Aeronautics and Space Administration.

**nasal**

(1) *See nose.* (2) Pertaining to the sound produced when the velum is lowered to allow air passage through the nasal cavity.

**nasal bone**

The bone forming part of the bridge of the nose and extending in an anterior-inferior direction to form the base for the protruding portion of the nose.

**nasal breadth**

*See nose breadth.*

**nasal cavity**

The region between the external nares and the nasopharynx.

**nasal field**

The medial portion of the eye's field of view.

**nasal height**

*See nose height.*

**nasal reflex**

The induction of sneezing due to stimulation of the nasal mucous membranes.

**nasal root**

The junction of the nasal bone with the frontal bone.

**nasal root breadth**

The minimum horizontal linear distance across the base of the nose between the eyes. Measured with the facial muscles relaxed.

**nasal root depression**

The concave region where the bridge of the nose meets the forehead between the eyes.

**nasal septum**

The collective tissues separating the right nostril from the left.

**nasalize**

To produce a sound with the nasal portion of the vocal tract open.

**NASC**

National Aeronautics and Space Council.

**nascent**

Coming into existence or in the process of emerging.

**nasion**

The horizontal and vertical midpoint of the nasofrontal suture on the skull.

**nasogastric tube**

A tube of soft rubber or plastic that is inserted through a nostril and into the stomach. The tube may be inserted for the purpose of instilling liquid foods or other substances, or as a means of withdrawing gastric contents.

**nasolacrimal**

Pertaining to the nose and lacrimal apparatus.

**nasolacrimal duct**

The tubular structure interconnecting the medial portion of the eye to the nasal cavity for drainage of tears.

**nasopharyngitis**

Inflammation of the nasopharynx which is situated above the soft palate at the roof of the mouth.

**nasopharynx**

The uppermost cavity of the pharynx, lying behind the internal nasal cavity and the soft palate.

**National Advisory Committee on Occupational Safety and Health (NACOSH)**

Committee established to advise, consult, and make recommendations to the Secretary of Health and Human Services on matters regarding administration of the Department of Labor's Occupational Safety and Health Act.

**National Aeronautics and Space Administration Standard (NASA-STD)**

A document containing standards published by NASA for use in the U.S. space program and related aerospace or medical work.

**National Airspace System (NAS)**

The common network of U.S. airspace; air navigation facilities, equipment, and services; airports or landing areas; aeronautical charts, information, and services; rules, regulations, and procedures; technical information, manpower, and material. Included are system components shared jointly with the military.

**National Airspace System (NAS) Stage A**

The en route Air Traffic Control (ATC) system's radar, computers and computer programs, controller plain view displays (Plain View Displays (PVD)/Radar Scopes), input/output devices, and the related communi-

cations equipment which are integrated to form the heart of the automated instrument flight rules (IFR) air traffic control system. This equipment performs flight data processing (FDP) and radar data processing (RDP). It interfaces with automated terminal system and is used in the control of en route IFR aircraft.

#### **National Ambient Air Quality Standards (NAAQS)**

Air quality criteria established by the EPA that apply to outside air. Established under the Clean Air Act of 1970, NAAQS set the maximum concentration levels for various pollutants. NAAQS are promulgated on a pollutant-by-pollutant basis. Originally, the EPA applied NAAQS to seven specific pollutants, which became known as *criteria pollutants*. These pollutants are carbon monoxide, hydrocarbons, lead, nitrogen dioxide, sulfur dioxide, ozone, and suspended particulates. *See also criteria pollutants.*

#### **National Beacon Code Allocation Plan Airspace**

Airspace over United States territory located within the North American continent between Canada and Mexico, including adjacent territorial waters outward to about boundaries of oceanic control areas (CTA)/flight information regions (FIR).

#### **National Boating Safety Advisory Council (NBSAC)**

A 21-member council, equally represented by industry, the public, and State Boating Law Administrators, with expertise, knowledge, and experience in boating safety. The Council acts in an advisory or consulting capacity to the Commandant – U.S. Coast Guard.

#### **National Bridge Inspection Standards (NBIS)**

Federal regulations establishing requirements for inspection procedures, frequency of inspections, qualifications of personnel, inspection reports, and preparation and maintenance of a state's bridge inventory.

#### **National Bridge Inventory (NBI)**

The aggregation of structure inventory and appraisal data collected to fulfill the requirements of the National Bridge Inspection Standards that each state shall prepare and maintain an inventory of all bridges subject to the National Bridge Inspection Standards.

#### **National Cancer Institute (NCI)**

Supports research and the dissemination of information related to occupational cancer hazards, as well as for other causes of cancer.

#### **National Carrier Group**

Air carrier groups with annual operating revenues between one hundred million and one billion dollars.

#### **National Contingency Plan**

*See National Oil and Hazardous Substances Contingency Plan.*

#### **National Cooperative Highway Research Program (NCHRP)**

The cooperative research, development, and technology transfer (RD&T) program directed toward solving problems of national or regional significance identified by states and the FHWA, and administered by the Transportation Research Board, National Academy of Sciences.

#### **National Cooperative Transit Research and Development Program**

A program established under Section 6a) of the Urban Mass Transportation Act of 1964, as amended, to provide a mechanism by which the principal client groups of the Urban Mass Transportation Administration can join cooperatively in an attempt to resolve near-term public transportation problems through applied research, development, testing, and evaluation. NCTRP is administered by the Transportation Research Board.

#### **National Council on Radiation Protection (NCRP)**

An advisory group, chartered by the U.S. government to develop and make recommendations on ionizing radiation protection in the United States.

#### **national emergency**

A state of national crisis; a situation demanding immediate and extraordinary national or federal action. Congress has made little or no distinction between a "state of national emergency" and a "state of war."

#### **National Emission Standards for Hazardous Air Pollutants (NESHAPS)**

These emission standards are set by the EPA for an air pollutant not covered by NAAQS that may cause an increase in deaths, or irreversible or incapacitating illness. Primary



standards are designed to protect human health, secondary standards to protect public welfare. *See also [National Ambient Air Quality Standards](#).*

#### **National Environmental Policy Act (NEPA) of 1969**

The Act emphasizes the need for a national environmental policy for public awareness and national response.

#### **National Fire Protection Association (NFPA)**

A voluntary, nonprofit association committed to making both the home and the workplace more fire-safe. Members promote scientific research into the development and updating of fire safety awareness and produce information and practical publications on fire safety that are of interest to all concerned with the preservation of life and property from fire. The NFPA is a non-regulatory agency (i.e., carries no force of law). However, many of its codes have been adopted by regulatory agencies and, therefore, compliance is mandatory. Examples include NFPA 70E (National Electrical Code®) and NFPA 101 (Life Safety Code®), which have been adopted by OSHA.

#### **National Flight Data Center**

A facility in Washington DC, established by the Federal Aviation Administration (FAA) to operate a central aeronautical information service for the collection, validation, and dissemination of aeronautical data in support of the activities of government, industry, and the aviation community. The information is published in the National Flight Data Digest.

#### **National Flight Data Digest**

A daily (except weekends and federal holidays) publication of flight information appropriate to aeronautical charts, aeronautical publications, Notices to Airmen, or other media serving the purpose of providing operational flight data essential to safe and efficient aircraft operations.

#### **National Health Interview Survey**

A survey conducted by the National Center for Health Statistics via interviews of household samples of the U.S. civilian, non-institutionalized population on various health and health status issues.

#### **National Highway System (NHS)**

This system of highways designated and approved in accordance with the provisions of 23 U.S.C. 103b).

#### **National Highway Traffic Safety Administration (NHTSA)**

The Administration was established by the Highway Safety Act of 1970 (23 U.S.C. 401 note). The NHTSA was established to carry out a congressional mandate to reduce the mounting number of deaths, injuries, and economic losses resulting from motor vehicle crashes on the nation's highways and to provide motor vehicle damage susceptibility and ease of repair information, motor vehicle inspection demonstrations and protection of purchasers of motor vehicles having altered odometers, and to provide average standards for greater vehicle mileage per gallon of fuel for vehicles under 10,000 pounds (gross vehicle weight).

#### **National Income**

The aggregate earnings of labor and property which arise in the current production of goods and services by the nation's economy.

#### **National Inland Waterways Transport**

Inland waterways transport between two places (a place of IWT loading/embarkment and a place of unloading/disembarking) located in the same country irrespective of the country in which the IWT vessel is registered. It may involve transit through a second country.

#### **National Inland Waterways Transport Vessel**

Inland waterways transport (IWT) vessel which is registered at a given date in the reporting country.

#### **National Institute for Occupational Safety and Health (NIOSH)**

That part of the U.S. Department of Health and Human Services that is responsible for investigating the occurrence and causes of occupational diseases and for recommending appropriate standards to the Occupational Safety and Health Administration.

#### **National Institutes of Health (NIH)**

A section of the Public Health Service that conducts research related to diseases and body injuries and helps establish burn treatment centers.



**National Labor Relations Act**

A federal statute known as the Wagner Act of 1935 and amended by the Taft-Hartley Act of 1947. It is a comprehensive legislation regulating the relations between employers and employees, including supervised elections, and establishing the National Labor Relations Board.

**National Labor Relations Board (NLRB)**

The NLRB is an independent agency created by the National Labor Relations Act of 1935 (Wagner Act), as amended by the acts of 1947 (Taft-Hartley Act) and 1959 (Landrum-Griffin Act). The Board has two principal functions under the Act: preventing and remedying unfair labor practices by employers and labor organizations or their agents, and conducting secret ballot elections among employees in appropriate collective bargaining units to determine whether or not they desire to be represented by a labor organization. The Board also conducts secret ballot elections among employees who have been covered by a union-shop agreement to determine whether or not they wish to revoke their union's authority to make such agreements. In jurisdictional disputes, the NLRB decides and determines which competing group of workers is entitled to perform the work involved. The Board also conducts secret ballot elections among employees concerning the employers' final settlement offers in national emergency labor disputes.

**National Mediation Board**

Created on June 21, 1934 by an Act of Congress amending the Railway Labor Act, the Board's major responsibilities are a) the mediation of disputes over wages, hours, and working conditions which arise between rail and air carriers and organizations representing their employees; and b) the investigation of representation disputes and certification of employee organizations as representatives of crafts or classes of carrier employees.

**National Oil and Hazardous Substances Contingency Plan**

The federal regulation that guides determination of the sites to be corrected under the Superfund program and the program to prevent or control spills into surface waters or other portions of the environment. Also known as the *National Contingency Plan* or *NCP*.

**National Pollution Discharge Elimination System (NPDES)**

A provision of the Clean Water Act which prohibits discharge of pollutants into waters of the United States without a special permit issued by the EPA, a state, or (where delegated) a tribal government on an Indian Reservation.

**National Priorities List (NPL)**

The EPA's list of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial action under Superfund. A site must be on the NPL to receive money from the Trust Fund for remedial actions. The list is based primarily on the score a site receives from the Hazard Ranking System (HRS). The EPA is required to update the NPL at least annually.

**National Response Center (NRC)**

The federal operations center that receives notifications of all releases of oil and hazardous substances into the environment. The NRC is operated 24 hours per day by the United States Coast Guard, which evaluates all reports and notifies the appropriate agencies.

**National Response Team (NRT)**

Representatives of thirteen federal agencies that, as a team, coordinate federal responses to nationally significant incidents of pollution and provide advice and technical assistance to the responding agencies before and during a response action.

**National Safety Council (NSC)**

Independent nonprofit organization that provides information, literature, training, and support for occupational safety and health related programs and issues with the goal of reducing the number and severity of accidents/occupational diseases in the U.S. and finding ways to prevent their occurrence.

**National Search and Rescue Plan**

An interagency agreement which provides for the effective utilization of all available facilities in all types of search and rescue missions.

**National Toxicology Program (NTP)**

Established to determine the toxic effects of chemicals and to develop more effective and less expensive toxicity test methods.

**National Transit Database**

(Formerly Section 15) A reporting system, by uniform categories, to accumulate mass transportation financial and operating information and a uniform system of accounts and records. The reporting and uniform systems shall contain appropriate information to help any level of government make a public sector investment decision. The Secretary [of Transportation] may request and receive appropriate information from any source.

**National Transportation System (NTS)**

An intermodal system consisting of all forms of transportation in a unified, interconnected manner to reduce energy consumption and air pollution while promoting economic development and supporting the nation's preeminent position in international commerce. The NTS includes the National Highway System (NHS), public transportation, and access to ports and airports.

**Nationally Recognized Testing Laboratory (NRTL)**

A laboratory that has been accredited (for a minimum of five years) by OSHA to test and certify products that require certification under OSHA's safety and health standards.

**nation's freight bill**

The amount spent annually on freight transportation by the nation's shippers; also represents the total revenue of all carriers operating in the nation.

**Nationwide Personal Transportation Survey (NPTS)**

(1) A nationwide home interview survey of households that provides information on the characteristics and personal travel patterns of the U.S. population. Surveys were conducted in 1969, 1977, 1983, and 1990 by the U.S. Bureau of Census for the U.S. Department of Transportation. (2) A periodic national survey that provides comprehensive information on travel by the U.S. population, along with related socioeconomic characteristics of the trip maker. The NPTS is designed to allow an analysis of travel by characteristics of the trip (e.g., length, purpose, mode), the trip maker (e.g., age, sex, household income), and the vehicle used (e.g., model year, vehicle type, make, and model). NPTS surveys were conducted in 1969, 1977 and 1983 by the Bureau of Census (BOC) for the Department of

Transportation (DOT). The 1990 NPTS was sponsored by a group of DOT agencies, specifically the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), National Highway Traffic Safety Administration (NHTSA), Office of the Secretary (OST), and the Federal Transit Administration (FTA). The survey was conducted for DOT by Research Triangle Institute. Information was collected on all trips taken by each household member age 5 and older during a designated 24-hour period, known as a "travel day," and on trips of 75 miles or more taken during the preceding 14-day period, known as the "travel period." The trip information was expanded to annual estimates of trips and travel. The survey encompassed trips on all modes of transportation for all trip purposes and all lengths.

**natural and probable consequences**

Those consequences that a person, by prudent human foresight, can anticipate as likely to result from an act because they happen so frequently from the commission of such an act that in the field of human experience they may be expected to happen again.

**Natural Color System**

*See color ordering system.*

**natural draft**

The negative pressure created by the height of a stack or chimney and the temperature difference between the flue gas and the outside.

**natural environment**

That environment relatively unaffected by man.

**natural fiber**

Any fiber having a plant or animal origin.

**natural flood channel**

A channel beginning at some point on the banks of a stream and ending at some other point lower downstream, through which flood waters naturally flow at times of high water.

**natural frequency**

As pertains to vibration, the frequency at which an undamped system will oscillate when momentarily displaced from its rest position.

**natural gas**

A mixture of naturally occurring gases of hydrocarbon and nonhydrocarbon components

(the main component is methane) usually associated with petroleum deposits.

**natural gas marketed production**

Gross withdrawals of natural gas from production reservoirs, less gas used for reservoir repressuring; nonhydrocarbon gases removed in treating and processing operations; and quantities vented and flared.

**Natural Gas Policy Act (NGPA) of 1978**

Section 311, Construction, allows an interstate pipeline company to transport gas "on behalf of" any intrastate pipeline or local distribution company. Pipeline companies may expand or construct facilities used solely to enable this transportation service, subject to certain conditions and reporting requirements.

**natural gas transmission**

Establishments engaged in the transmission and/or storage of natural gas for sale.

**natural gas transmission and distribution**

Establishments engaged in both the transmission and distribution of natural gas for sale.

**natural language**

A computer language in which the rules approximate those of the user's normally written language.

**natural radioactivity**

The property of radioactivity exhibited by more than fifty naturally occurring radionuclides.

**natural resources**

Land, fish, wildlife, biota, air, water, groundwater, drinking water supplies, and other such resources belonging to, managed by, held in trust by, appertaining to, or otherwise controlled by the United States, any state or local government, any foreign government, any Indian tribe, or, if such resources are subject to a trust restriction on alienation, any member of an Indian tribe.

**natural selection**

The process of survival of the fittest, by which organisms that adapt to their environment survive and those that do not disappear.

**natural ventilation**

Air movement created by wind, a temperature difference, or other non-mechanical means. The movement of outdoor air into a space through intentionally provided openings, such

as doors or windows, as well as by infiltration.

**natural wet-bulb temperature**

The temperature indicated by a wetted thermometer bulb that is exposed to and cooled by the movement of the surrounding air. *See also wet-bulb temperature.*

**naturally occurring background levels**

Ambient concentrations of chemicals that are present in the environment and have not been influenced by humans (e.g., aluminum, magnesium).

**naturally occurring radioactive material (NORM)**

Any nuclide which is radioactive in its natural physical state but does not include source material or special nuclear material (i.e., plutonium, uranium-233, or uranium enriched in the isotopes uranium-233 or uranium-235).

**naturopathy**

A drugless system of healing by the use of physical methods, such as light, air, water, etc.

**nausea**

An unpleasant physical sensation, often culminating in vomiting. Nausea may be a symptom of a variety of disorders, some minor and some more serious. Nausea is usually felt when nerve endings in the stomach and other parts of the body are irritated. The irritated nerves send messages to the center of the brain that controls the vomiting reflex. When the nerve irritation becomes intense, vomiting results. Nausea and vomiting may be set off by nerve signals from many other parts of the body besides the stomach. For example, intense pain in almost any part of the body can produce nausea. The reason is that the nausea-vomiting mechanism is part of the involuntary autonomic nervous system. Nausea can also be precipitated by strong emotions.

**NAVAID**

*See navigation aid.*

**navel**

*See umbilicus.*

**navicular bone**

(1) *Foot.* A bone in the posterior portion of the foot. (2) *Wrist.* The largest bone in the

wrist, located in the proximal row of bones on the thumb side. Also called *scaphiod bone*.

**navigable airspace**

Airspace at and above the minimum flight altitudes prescribed in the Federal Aviation Regulations (FARs) including airspace needed for safe takeoff and landing.

**navigable canal**

Waterway built primarily for navigation.

**navigable inland waterway**

A stretch of water, not part of the sea, over which vessels of a carrying capacity of not less than 50 tons can navigate when normally loaded. This term covers both navigable rivers and lakes and navigable canals.

**navigable lake**

Natural expanse of water open for navigation.

**navigable pass**

The water pass through which vessels may pass over a movable dam during periods of high water. The wickets of the dam are lowered to the riverbed and the water flows with little or no obstruction. Navigable passes are usually from 600 feet to 900 feet in width when the dam is lowered. These are found only in the Ohio and Illinois rivers.

**navigable river**

Natural waterway open for navigation irrespective of whether it has been improved for that purpose.

**navigable waters**

(1) Traditionally, waters sufficiently deep and wide for navigation by all, or specified sizes of vessels; such waters in the United States come under federal jurisdiction and are included in certain provisions of the Clean Water Act. (2) The waters of the United States, including the territorial sea and such waters as lakes, rivers, streams; waters which are used for recreation; and waters from which fish or shellfish are taken and sold in interstate or foreign commerce.

**navigable waters of the U.S.**

Waters of the United States that are subject to the ebb and flow of the tide, and/or are presently used, or have been used in the past, or may be susceptible to use to transport interstate or foreign commerce.

**navigation**

Those activities involved in directing the movement of a vehicle toward its intended destination.

**navigation aid (NAVAID)**

Includes electrical and visual air navigation aids, lights, signs, and their supporting equipment.

**navigation aid classes**

Very high frequency omnidirectional radio range (VOR), combined very high frequency omnidirectional radio range (VOR) and tactical aircraft control and navigation (TACAN) navigational facility (VORTAC), and TACAN aids are classed according to their operational use. The three classes of NAVAIDs are T-Terminal, L-Low altitude, H-High altitude.

**navigation bulletin**

See *public notice*.

**navigational aid**

Any visual or electronic device airborne or on the surface which provides point-to-point guidance information or position data to aircraft in flight. See also *air navigation facility*.

**NBI**

See *National Bridge Inventory*.

**NBIS**

See *National Bridge Inspection Standards*.

**NBS**

National Bureau of Standards.

**NBSAC**

See *National Boating Safety Advisory Council*.

**NCC**

See *noise criterion curve*.

**NCHRP**

See *National Cooperative Highway Research Program*.

**NCI**

See *National Cancer Institute*.

**NCP**

National Contingency Plan. See *National Oil and Hazardous Substances Contingency Plan*.

**NCRP**

See *National Council on Radiation Protection*.

**NDE**

See *non-destructive evaluation*.

**NDI**

Nondestructive inspection. See *discussion of nondestructive evaluation (NDE)*.

**NDIR**

See *nondispersive infrared*.

**NDT**

Nondestructive testing. See *discussion of nondestructive evaluation (NDE)*.

**near-accident**

See *near-miss*.

**near field**

(1). *Acoustics*. The area close to a sound source within which the sound pressure level does not obey the inverse square law concept (i.e., reduction of 6 dBA for each doubling of distance from the noise source). (2). *Electromagnetic Radiation*. Region near a radiating electromagnetic source or structure in which the electric and magnetic fields do not have a substantially planewave character, but vary considerably from point to point. Typically the near field extends out to at least five wavelengths from the radiating device.

**near infrared**

That portion of the infrared radiation spectrum just beyond the visual range, from about 750 nm to 1400 nm.

**near midair collision**

An incident associated with the operation of an aircraft in which a possibility of collision occurs as a result of proximity of less than 500 feet to another aircraft, or a report is received from a pilot or flight crew member stating that a collision hazard existed between two or more aircraft. Near midair collisions are categorized based upon the *degree of hazard*, as follows:

*Critical*: A situation in which collision avoidance was due to chance rather than an act on the part of the pilot. Less than 100 feet of aircraft separation would be considered critical.

*Potential*: An incident which would probably have resulted in a collision if no action had been taken by either pilot. Closest

proximity of less than 500 feet would usually be required in this case.

*No Hazard*: A situation in which direction and altitude would have made a midair collision improbable regardless of evasive action taken.

**near-miss**

An occurrence or happening that had the potential to result in some degree of injury, property damage, or both, but did not. Also referred to as a *near-accident*.

**near ultraviolet**

Pertaining to that portion of the ultraviolet radiation spectrum having wavelengths ranging from about 300 to 380 nm.

**near vision**

The ability to see the close physical environment.

**near vision chart**

Any of a number of cards with letters, words, or paragraphs for determining the smallest font size which can be easily read under given conditions.

**nearsightedness**

A condition in which vision for near objects is better than for distant ones. See *myopia*.

**nebula**

(1) Slight corneal opacity. (2) Cloudiness in urine. (3) A liquid substance prepared for use as a spray. (4) A cloud of interstellar gas and dust.

**NEC**

National Electrical Code.

**necessary damages**

A term said to be much wider in scope in the law of damages than pecuniary. It embraces all those consequences of an injury usually referred to as *general* damages, as distinguished from *special* damages; whereas the phrase *pecuniary damages* covers a smaller class of damages within the larger class of general damages.

**neck**

The region of the body comprised of those tissues which connect the trunk with the head, including the cervical vertebrae.

**neck breadth**

The horizontal linear distance from one side of the neck to the other at the vertical mid-

point between otobasion inferior and the shoulder. Measured with the individual standing erect, the facial and neck musculature relaxed, and without flesh compression.

**neck – bustpoint length**

The surface distance from the neck-shoulder junction to the tip of the bra. Measured with the individual standing erect, the facial, neck, and torso musculature relaxed.

**neck – cervical length**

The surface distance from the cervicale to the point at which the neck-shoulder junction becomes the vertical portion of the neck. Measured with the individual standing erect, the neck and scalp musculature relaxed.

**neck circumference, maximum**

The maximum surface distance around the neck, including the thyroid cartilage in the male. Measured without flesh compression, with the individual standing erect, looking straight ahead, and the neck musculature relaxed.

**neck circumference, minimum**

The minimum surface distance around the neck inferior to the laryngeal prominence. Measured without flesh compression, with the individual standing erect, looking straight ahead, and the neck musculature relaxed.

**neck depth**

The horizontal linear distance from the anterior protrusion of the neck to the nape of the neck. Measured with the individual standing erect, the facial and neck musculature relaxed, and without flesh compression.

**neck – shoulder junction**

The level of the lateral point at which the shoulder and neck meet and the angle of the surface arc is 45° above horizontal.

**neck – waist length**

The surface distance from the superior point of the neck-shoulder junction over the front midline of the body to the midsagittal waist level.

**neckrest**

Any padded structure which provides support to the neck, especially when sitting.

**necropsy**

Examination of the body after death.

**necrosis**

The death of one or more cells or a portion of a tissue or organ, usually resulting from irreversible damage to the affected area.

**needle**

*Maritime.* A long stick of timber placed between the wickets of a movable dam to stop the leakage of water between the gates. A needle flat is a small barge used in transporting these timbers.

**needle beam scaffold**

A light duty scaffold consisting of needle beams supporting a platform.

**needs analysis**

The breakdown of identified needs into their component parts to determine the causes or reasons for the needs.

**needs assessment**

The determination and identification of the knowledge, skills, abilities, or other characteristics that are required for a task, job, or operation.

**negative**

Having a value of less than zero; including lack or absence. Characterized by denial or opposition.

**negat                      tion**

*See deceleration.*

**negative afterimage**

An image seen on a bright background following the removal of a stimulus, and which is approximately the complementary color of the original stimulus.

**negative air machine**

A device consisting of a fan and ductwork and often a high-efficiency particulate air (HEPA) filter. It is used to move air from one area to another to maintain a state of negative air pressure inside a contaminated area and thus prevent leakage of the contaminants into other areas.

**negative air pressure**

(1) Air pressure in a room or duct that is less than the pressure in adjacent areas. (2) Condition that exists when less air is supplied to a space than is exhausted from the space, so the air pressure within that space is less than that in surrounding areas.



**negative contact**

*Aviation.* Term used by pilots to inform Air Traffic Control (ATC) that a) previously issued traffic is not in sight. It may be followed by the pilot's request for the controller to provide assistance in avoiding the traffic; b) they were unable to contact ATC on a particular frequency.

**negative feedback**

A signal which tends to decrease the output of a system.

**negative feedback mechanism**

*See feedback mechanism.*

**negative g**

An acceleration acting along the body's longitudinal axis in a superior direction.

**negative pressure**

Condition that exists when less air is supplied to a space than is exhausted from the space so the air pressure within that space is less than that in the surrounding area.

**negative pressure respirator**

A respirator in which the pressure inside the respirator is negative during inspiration relative to the pressure outside, and positive inside the respirator relative to the pressure outside during exhalation.

**negative reinforcement**

That which causes a weakening or a decrease in the frequency or size of a response as a result of contingent reinforcement.

**negative skew**

Having a distribution curve with the mean less than the mode.

**negative transfer**

A condition in which previous experience causes interference with the learning of a new task, usually due to conflicting stimuli or response requirements.

**negative work**

That dynamic work done by a person using external forces and eccentric muscle contractions.

**negatron**

A negatively charged electron.

**neglect**

May mean to omit, fail, or forbear to do a thing that can be done, or that is required to be done, but it may also import an absence of

care or attention in the doing or omission of a given act.

**negligence**

Failure to take reasonable care to avoid causing foreseeable harm to another and which failure caused the harm.

**negligible event**

An occurrence, subsequent to the introduction of a hazard or set of hazards into a system, that results in a level of injury, damage, or loss of such insignificant consequence that quick or total recovery would be highly probable and possible. The parameters for this categorization are usually established by management in the System Safety Program Plan, or other policy-making documentation.

**negotiation**

Discussion among the interested parties in a dispute to seek a resolution.

**NEI**

Non-explosive initiator.

**nem**

A nutrition unit, based on the caloric content of one gram of standard composition breast milk. Equal to about 0.6 calorie.

**NEMA**

National Electrical Manufacturers Association.

**nematocide**

A chemical agent which is destructive to nematodes (roundworms or threadworms). *See also nematode.*

**nematode**

Invertebrate animals of the phylum nemathelminthes and class nematoda, that is, unsegmented round worms with elongated, fusiform, or sac-like bodies covered with cuticle, and inhabiting soil, water, plants, or plant parts; may also be called nemas or eelworms.

**neonate**

A newborn infant.

**neoplasia**

A condition characterized by the presence of new growths (tumors).

**neoplasm**

(1) Term commonly used to describe a cancer, but technically means any new growth of cells that is more or less unrestrained and not governed by the usual limitations of normal

growth. The growth is *benign* if there is some degree of growth restraint and no spread to distant parts. It is *malignant* if it invades other tissues of the host, spreads to distant parts, or both. (2) A mass of new, abnormal tissue; a new growth or tumor. *See also tumor*.

**neoplastic**

Of or pertaining to a *neoplasm* or a cancer.

**NEPA**

*See National Environmental Policy Act.*

**néper (Np)**

A unit of absorption/attenuation for sound waves, based on the natural logarithm of the ratio of two quantities. Also *napier*.

**nephelometer**

An instrument which measures the scattering of light due to particles suspended in a medium, such as water.

**nephelometry**

Photometric analytical technique for measuring the light scattered by finely divided particles of a substance in suspension.

**nephrectomy**

Surgical removal of a kidney. The procedure is indicated when chronic disease or severe injury produces irreparable damage to the renal cells. Tumors, multiple cysts, and congenital anomalies may also necessitate removal of a kidney. A single kidney can carry on function formerly done by both kidneys, and thus a patient can survive nephrectomy in good health.

**nephritis**

Inflammation of the kidneys. The most usual form is glomerulonephritis, that is, inflammation of the glomeruli (clusters of renal capillaries). Damage to the membranes of the glomeruli results in impairment of the filtering process, so that blood and proteins such as albumin pass out into the urine. Depending on the symptoms it produces, nephritis is classified as acute nephritis, chronic nephritis, or *nephrosis*. *Acute nephritis* occurs most frequently in children and young people. The disease seems to strike those who have recently suffered from sore throat, scarlet fever, and other infections that are caused by streptococci, and it is believed to originate as an immune response on the part of the kidney.

An attack of acute nephritis may produce no symptoms. More often, however, there are headaches, a malaise, back pain, and perhaps slight fever. The urine may look smoky, bloody, or wine colored. Analysis of the urine shows the presence of erythrocytes, albumin, and casts. Another symptom is edema. If this occurs, the face or ankles are swollen, more so in the morning than in the evening. The blood pressure usually rises during acute nephritis and, in severe cases, hypertension may be accompanied by convulsions. *Chronic nephritis* may follow a case of acute nephritis immediately or it may develop after a long interval during which no symptoms have been present. Many cases of chronic nephritis occur in people who have never had the acute form of the disease. The symptoms of chronic nephritis are often unpredictable, with great variations in different cases. But in almost every case of the disease there is steady, progressive, permanent damage to the kidneys. Chronic nephritis generally moves through three stages. In the first stage, the latent stage, there are few outward symptoms. There may be slight malaise, but often the only indication of the disease is the presence of albumin and other abnormal substances in the urine. If a blood count is performed during this stage, anemia may be found. There is no special treatment during the latent stage of chronic nephritis. The person can lead a perfectly normal life but should avoid extremes of fatigue and exposure, and should eat a well-balanced diet. There may be a second stage of chronic nephritis in which edema occurs. Excess body fluids collect in the face, legs, or arms. It is particularly important, at any stage of chronic nephritis to avoid other infections, which will aggravate the condition. The final stage of chronic nephritis is uremia. At this point, damage to the kidneys is so extensive that they begin to fail. Also call *Bright's disease*. *See also nephrosis*.

**nephroptosis**

Downward displacement of a kidney, also called *floating* or *dropped kidney*. Displacement can occur when the kidney supports are weakened by a sudden strain or blow, or are congenitally defective.

**nephrosclerosis**

Hardening of the kidney associated with hypertension and disease of the renal arterioles. It is characterized as benign or malignant depending on the severity and rapidity of the hypertension and arteriolar changes.

**nephrosis**

A disease of the kidneys in which there is malformation of the kidney tissue without inflammation. It probably represents one stage of nephritis and is marked by excessive accumulation of fluid in the body, apparently due to the inability of the kidneys to regulate the body's water content properly. It is further characterized by a great loss of protein in the urine and decreased serum albumin. The exact cause is unknown but the disease may follow acute nephritis.

**nephrotoxic agent**

See *nephrotoxin*.

**nephrotoxin**

A toxin known to have deleterious effects on the kidney tissue. Also referred to as a *nephrotoxic agent*.

**nerve**

(1) A collection of one or more axons bound together by connective tissue and having a defined origin and termination. (2) A cordlike structure of the body, composed of highly specialized tissue, by which impulses are conveyed from one region of the body to another. Depending on their function, nerves are known as sensory, motor, or mixed. Sensory nerves, sometimes called afferent nerves, carry information from the outside world to the brain and spinal cord. Sensation of heat, cold, and pain are conveyed by the sensory nerves. Motor nerves, or efferent nerves, transmit impulses from the brain and spinal cord to the muscles. Mixed nerves are composed of both motor and sensory fibers, and transmit messages in both directions at once. Together, the nerves make up the peripheral nervous system, as distinguished from the central nervous system, which consists of the brain and spinal cord. There are twelve pairs of cranial nerves, which carry messages to and from the brain. Spinal nerves arise from the spinal cord and pass out between the vertebrae. There are 31 pairs: 8 cervical, 12 thoracic, 5 lumbar, 5 sacral, and 1 coccygeal. The various nerve fibers and cells that make

up the autonomic nervous system serve the glands, heart, blood vessels and involuntary muscles of the internal organs.

**nerve cell**

The basic unit of the nervous system. The highly specialized cell has many fibers extending from it which carry messages in the form of electrical charges and chemical changes. The fibers of some cells are only a fraction of an inch long, but those of others (for example, the sciatic nerve) extend for 2 or 3 feet. These fibers reach into muscles and organs throughout the body, to the ends of the fingers and toes, and cluster by the thousands in areas of the skin no larger than the head of a pin. See *neuron*.

**nerve deafness**

A hearing impairment due to some abnormality in the auditory nerve.

**nervous breakdown**

A popular term for any type of mental illness that interferes with a person's normal activities. The term does not refer to a specific disturbance. The so-called "nervous breakdown" can include any of the mental disorders, including neurosis, psychosis, or depression.

**nervous system**

A system comprised of neural and various supporting tissues which is capable of taking input, integrating that input, and providing motor output.

**nervousness**

Morbid or undue excitability.

**NESHAPS**

See *National Emission Standards for Hazardous Air Pollutants*.

**nested**

Located within some larger structure.

**net energy**

See *delivered energy*.

**net horsepower**

The usable power output of an engine "as installed." Net horsepower is the gross horsepower minus the horsepower used to drive the alternator, water pump, fan, etc. at a specified rpm.

**net income or loss before income taxes**

The operating profit (or loss) which is operating revenues less operating expenses less non-

operating income and expenses produces the net income, but before "nonrecurring items."

**net instrument response**

The gross instrument response for the sample, minus the sample blank.

**net maximum dependable capacity**

The gross electrical output measured at the output terminals of the turbine generator(s) during the most restrictive seasonal conditions, less the station service load.

**net metabolic cost**

That metabolic activity incurred only from a particular activity, with the basal metabolic rate subtracted from the gross metabolic cost.

**net module shipments**

Represents the difference between module shipments and module purchases. When exported, incomplete modules and unencapsulated cells are also included.

**net productivity rate**

The annual per capita rate of increase in a stock resulting from additions due to reproduction, less losses due to mortality.

**net receipts**

*Shipping.* The difference between total movements into and total movements out of each PAD District by pipeline, tanker, and barge.

**net tare weight**

The weight of an empty cargo-carrying piece of equipment plus any fixtures permanently attached.

**net ton mile**

*Rail Operations.* The movement of revenue and/or nonrevenue freight a distance of one mile. Includes a reasonable portion of the weight of exclusive work equipment and motorcar trains moved one mile.

**net tonnage**

The net or register tonnage of a vessel is the remainder after deducting from the gross tonnage of the vessel the tonnage of crew spaces, master's accommodations, navigation spaces, allowance for propelling power, etc. It is expressed in tons of 100 cubic feet.

**net weight**

*Shipping.* Weight of the goods alone without any immediate wrappings, (e.g., the weight of

the contents of a tin can without the weight of the can). *See also gross weight.*

**network**

(1) *General.* To meet or otherwise correspond with a select group of individuals who have something in common with one another. (2) *Computing.* The purposeful grouping of computer terminals for the purpose of sharing resources (peripherals, software, files, applications, etc.), usually in a business environment.

**network interface card (NIC)**

A device for transferring data over a network. *See also network (2).*

**network navigable inland waterway**

All navigable inland waterways open to public navigation in a given area.

**neural**

Pertaining to a nerve, the nerves, or the nervous system.

**neural loss**

Hearing loss due to nerve damage.

**neuralgia**

Sudden pain in a nerve or along the course of one or more nerves. Neuralgia is usually a sharp, spasm-like pain that may recur at intervals. It is caused by inflammation of or injury to a nerve or group of nerves. Inflammation of a nerve (neuritis) may affect different parts of the body, depending upon the location of the nerve. A commonly encountered form of neuralgia is sciatica, or pain occurring along the sciatic nerve. This pain is felt in the back and down the thigh to the ankle. It may result from inflammation of or injury to the sciatic nerve, and is often associated with conditions such as arthritis of the spine, slipped intervertebral disk, diabetes mellitus, and gout. *See also neuritis.*

**neurasthenia**

Neuroses marked by a lack of energy, depression, loss of appetite, insomnia, and inability to concentrate resulting from a functional disorder of the nervous system, due usually to prolonged and excessive expenditure of energy. Commonly referred to as nervous prostration.

**neuritis**

Inflammation of a nerve. There are many forms with different effects. Some increase or

decrease the sensitivity of the body part served by the nerve; others produce paralysis; some cause pain and inflammation. The cases in which pain is the chief symptom are generally called *neuralgia*. Neuritis and neuralgia attack the peripheral nervous system (i.e., the nerves that link the brain and spinal cord with the muscles, skin, organs, and all other parts of the body). These nerves usually carry both sensory and motor fibers; hence both pain and some paralysis may result. Certain toxic substances such as lead, arsenic, and mercury may produce a generalized poisoning of the peripheral nerves, with tenderness, pain, and paralysis of the limbs. Other causes of *generalized neuritis* include alcoholism, vitamin-deficiency diseases (such as beriberi and diabetes mellitus), thallium poisoning, some types of allergy, and some viral and bacteria infections (such as diphtheria, syphilis, and mumps). Some attacks of generalized neuritis begin with fever and other symptoms of an acute illness. However, neuritis caused by lead or alcohol poisoning comes on very slowly over the course of weeks or months. Usually an attack of generalized neuritis will subside by itself when the toxic substance is eliminated. Frequently, instead of a generalized irritation of the nerves, only one nerve is affected. For example, Bell's palsy (or facial paralysis) results when the facial nerve is affected. It usually lasts only a few days or weeks. Sometimes, however, the cause is a tumor pressing on the nerve, or injury to the nerve by a blow, cut, or even a bullet. In that event, recovery depends on the success in treating the tumor or the injury.

**neuroanatomy**

The study of nervous system structure.

**neuroceptor**

One of the terminal elements of a dendrite that receives a stimulus from the neuromittor of the adjoining neuron.

**neurochemistry**

The scientific study of the chemical processes taking place in the nervous system.

**neurocirculatory**

Pertaining to all or part of both the nervous and circulatory systems or the intersection between them.

**neurology**

Branch of medicine dealing with the nervous system and its disorders.

**neuromuscular**

Pertaining to all or part of both the motor aspects of the nervous system, the muscular system, or the interaction between them.

**neuromuscular junction**

That point of interface between the motor neuron and muscle tissue at which the synapse occurs. Also called *myoneural junction*.

**neuromuscular spindle**

A capsular proprioceptive sensory structure located within skeletal muscles which contains several intrafusal fibers and is responsive to stretch for providing nervous system feedback to prevent damage by overstretching.

**neuromuscular stimulation**

The stimulation of nervous and/or muscle tissue(s) via electrical, chemical, or other means.

**neuron**

A nerve cell, with its processes, collaterals, and terminations, regarded as the basic structural unit of the nervous system. Neurons are highly specialized cells having two characteristic properties: irritability, which means they are capable of being stimulated; and conductivity, which means they are able to conduct impulses. They are composed of a nerve cell body (neurosoma), one or more processes (nerve fibers) extending from the body, dendrites, and an axon.

The processes or nerve fibers are actually extensions of the cytoplasm surrounding the nucleus of the neuron. A nerve cell may have only one such slender fiber extending from its body, in which case it is classified as unipolar. A neuron having two processes is bipolar, and one with three or more processes is considered multipolar. Most neurons are multipolar, this type of neuron being widely distributed throughout the central nervous system and autonomic ganglia. The multipolar neurons have a single process called an axon and several branched extensions which are the dendrites. The dendrites receive stimuli from other nerves or from a receptor organ, such as the skin or ear, and transmit them through the neuron to the axon. The axon conducts the

impulses to the dendrite of another neuron or to an effector organ that is thereby stimulated to action. Many processes are covered with a layer of lipid material called myelin. Peripheral nerve fibers have a thin outer covering called neurolemma.

Neurons that receive stimuli from the outside environment and transmit them toward the brain are called afferent or sensory neurons. Neurons that carry impulses in the opposite direction, away from the brain and other nerve center muscles, are called efferent or motor neurons. Another type of nerve cell, the association of internuncial neuron, or interneuron, is found in the brain and spinal cord. These neurons conduct impulses from afferent to efferent neurons. The point at which an impulse is transmitted from one neuron to another is called a synapse. The transmission is chemical in nature (i.e., there is no direct contact between the axon of one neuron and the dendrites of another). The cholinergic nerves (parasympathetic nervous system) liberate at their axon endings a substance called acetylcholine, which acts as a stimulant to the dendrites of adjacent neurons. In a similar manner, the adrenergic nerves (sympathetic nervous system) liberate sympathin, a substance that closely resembles epinephrine and probably is identical to norepinephrine.

The synapse may involve one neuron in chemical contact with many adjacent neurons, or it may involve the axon terminals of one neuron and the dendrites of a succeeding neuron in a nerve pathway. There are many different patterns of synapses.

The dendrites of the sensory neurons are designed to receive stimuli from various parts of the body. These dendrites are called receptor end-organs and are of three general types: exteroceptors, interoceptors, and proprioceptors. Their names give a clue to their specific function. The exteroceptors are located near the external surface of the body and receive impulses from the skin. They transmit information about the senses of touch, heat, cold, and other factors in the external environment. The interoceptors are located in the internal organs and receive information from the viscera (e.g., pressure, tension, and pain). The proprioceptors are found in muscles, tendons, and joints and

transmit "muscle sense," by which one is aware of the position of his/her body in space.

The axons of motor neurons form synapses with skeletal muscle fibers to produce motion. These junctions are called motor end-plates or myoneural junctions. The axon of a motor neuron divides just before it enters the muscle fibers. These motor neurons are called somatic efferent neurons. Visceral efferent neurons form synapses with smooth muscle, cardiac muscle, and glands.

### **neuropathy**

A general term denoting functional disturbances and/or pathological changes in the peripheral nervous system.

### **neurophysiology**

The basic physiology of neurons and the nervous system in general, from simple metabolism to the generation and conduction of impulses.

### **neurosis**

An emotional disorder that can interfere with a person's ability to lead a normal, useful life, or can impair his/her physical health. A neurosis is generally a milder form of mental illness than a psychosis. Those persons with neurotic symptoms are usually in contact with reality; they are able to function in society even though they may feel uncomfortable or their efficiency may be impaired. By contrast, psychotic persons tend to withdraw from the real world into one of their own, or to act in strange, even bizarre, ways, and are often not aware of their illness. Sometimes referred to as *psychoneurosis*.

### **neurotendinous spindle**

See *Golgi tendon organ*.

### **neurotic**

(1) Pertaining to or affected with a neurosis. (2) Pertaining to the nerves. (3) A nervous person in whom emotions predominate over reason.

### **neurotoxic agent**

See *neurotoxin*.

### **neurotoxicity**

Toxic effects on the central or peripheral nervous system causing behavioral or neurological abnormalities.



**neurotoxicology**

The study of the effects of toxins on nerve tissue.

**neurotoxin**

A substance that is poisonous or destructive to nerve tissue. Also referred to as a *neurotoxic agent*.

**neurotransmitter**

A chemical which is released from one neuron at a chemical synapse and for which a receptor is located nearby on the same or another neuron.

**neutral body posture**

That posture which the body tends to assume when relaxed with the eyes closed or covered in a microgravity environment; the arms lie in front of the body with the elbows, the neck, the hips, and knees all somewhat flexed (given sufficient volume/space to assume this position under microgravity conditions).

**neutral body posture stature**

The maximum perpendicular linear distance from a plane at the most distal part of the feet to a plane at the highest point on the head when the subject is in the neutral body posture.

**neutral density filter**

An optical filter which reduces the intensity of light without appreciably changing the relative spectral distribution.

**neutral stability**

An atmospheric condition that exists in dry air when the environmental lapse rate equals the dry adiabatic rate. In saturated air the environmental lapse rate equals the moist adiabatic rate. Also referred to *neutrally stable air*.

**neutralization**

Decreasing the acidity or alkalinity of a substance by adding to it alkaline or acidic materials, respectively, as required.

**neutralizer**

A muscle which functions to prevent some undesired action of another muscle.

**neutrally stable air**

See *neutral stability*.

**neutrino**

A particle resulting from a nuclear reaction which carries energy away from the system but has no mass or charge.

**neutron**

A neutral particle (i.e., one without an electrical charge) of approximate unit mass present in all atomic nuclei, except those of ordinary (or light) hydrogen. Neutrons are used to initiate the fission and fusion process.

**neutron chain reaction**

A process in which some of the neutrons released in one fission event cause other fissions to occur.

**nevus**

A small, flat, elevated or pedunculated lesion of the skin, pigmented or nonpigmented, and with or without hair growth, characterized by a specific type of cell. More commonly referred to as a *mole*. Most moles are either brown, black, or flesh-colored. They may appear on any part of the skin. They vary in size and thickness, and occur in groups or singly. Usually they are not disfiguring. A nevus is usually not troublesome unless it is unsightly or unless it becomes inflamed or cancerous. Fortunately, nevi seldom become cancerous and, if they do, the cause is often constant irritation. Any change in size, color, or texture of a mole, or any excessive itching or any bleeding, should be reported to a physician. Moles can be removed by surgery or by one of several other methods, such as the application of solid carbon dioxide, injections, and radium treatment.

**new animal drug**

Any drug intended for use for animals other than man, including any drug intended for use in animal feed but not including such animal feed. The composition is a) such that such drug is not generally recognized, among experts qualified by scientific training and experience to evaluate the safety and effectiveness of animal drugs, as safe and effective for use under the conditions prescribed, recommended, or suggested in the labeling thereof; except that such a drug not so recognized shall not be deemed to be a "new animal drug" if at any time prior to June 25, 1938, it was subject to the Food and Drug Act of June 30, 1906, as amended, and if at such time its labeling contained the same representations concerning the conditions of its use; or b) the composition is such that the drug, as a result of investigations to determine its safety and effectiveness for use under such conditions,

has become so recognized but which has not, otherwise than in such investigations, been used to a material extent or for a material time under such conditions.

**new candle**

See *candela*.

**new drug**

According to the Federal Food, Drug, and Cosmetic Act: Any drug (except a new animal drug or an animal feed bearing or containing a new animal drug) the composition of which is such that such drug is not generally recognized, among experts qualified by scientific training and experience to evaluate the safety and effectiveness of drugs, as safe and effective for use under the conditions prescribed, recommended, or suggested in the labeling thereof, except that such a drug not so recognized shall not be deemed to be a "new drug" if at any time prior to the enactment of the Federal Food, Drug and Cosmetic Act it was subject to the Food and Drugs Act of June 30, 1906, as amended, and if at such time its labeling contained the same representations concerning the conditions of its use.

A new drug is also any drug (except a new animal drug or an animal feed bearing or containing a new animal drug) the composition of which is such that such drug, as a result of investigations to determine its safety and effectiveness for use under such conditions, has become so recognized, but which has not, otherwise than in such investigations, been used to a material extent or for a material time under such conditions.

**new look bus**

A bus with the predominant styling and mechanical equipment common to buses manufactured between 1959 and 1978.

**new source**

Any stationary source which is built or modified after publication of final or proposed regulations that prescribe a standard of performance which is intended to apply to that type of emission source.

**New Source Performance Standards (NSPS)**

Uniform national EPA air emissions and water effluent standards which limit the amount of pollution allowed from new sources, or from existing sources that have been modified.

**new underground storage tanks**

Tanks used to contain regulated substances and installed after December 22, 1988.

**new vehicle**

A vehicle which is offered for sale or lease after manufacture without any prior use.

**new vehicle storage**

A Fleet Management System (FMS) inventory status indicating vehicles that are placed in storage when first received and are awaiting assignment.

**Newton (N)**

A unit of force which, when applied to a mass of one kilogram, will give it an acceleration of one meter per second.

**newton-meter**

A unit of torque in the SI/MKS system, equal to a 1 N force acting perpendicularly at 1 meter from a point of rotation.

**Newton's first law of motion**

Every mass maintains its current state of motion unless acted on by one or more non-equilibrating forces. Also called *law of inertia*.

**Newton's laws of motion**

Three physical laws which govern the basic interactions of physical objects and forces. See *Newton's first law of motion, Newton's second law of motion, and Newton's third law of motion*.

**Newton's second law of motion**

The force required to impart a given acceleration to an object is proportional to the mass of that object.

**Newton's third law of motion**

For every action, there is an equal and opposing reaction.

**NFPA**

See *National Fire Protection Association*.

**ng**

Nanogram [0.001 g or 1000 picograms (pg)].

**NGPA**

See *Natural Gas Policy Act of 1978*.

**NGT**

See *nominal group technique*.

**NHS**

See *National Highway System*.

**NHTSA**

See *National Highway Traffic Safety Administration*.

**NIBS**

National Institute of Business Sciences.

**NIC**

See *network interface card*.

**nickel itch**

A type of dermatitis seen in some workers who are exposed to nickel.

**nicotine**

An alkaloid that in its pure state is a colorless, pungent, oily, and highly poisonous liquid, having an acrid burning taste. It is a constituent of tobacco. In water solution, it is sometimes used as an insecticide and plant spray and is generally highly effective because of its systemic poisoning properties. Although nicotine is highly toxic, the amount inhaled while smoking tobacco is too small to cause immediate death. The nicotine in tobacco can, however, cause indigestion and increase blood pressure, and dull the appetite. It also acts as a vasoconstrictor.

**NIEHS**

National Institute of Environmental Health Sciences.

**night**

(1) The hours between the end of evening civil twilight and the beginning of morning civil twilight or such other period between sunset and sunrise as may be specified by the appropriate authority. (Note: Civil twilight ends in the evening when the center of the sun's disk is 6 degrees below the horizon and begins in the morning when the center of the sun's disk is 6 degrees below the horizon). (2) The hours from 6:00 p.m. to 5:59 a.m.

**night blindness**

The inability of the eyes to quickly adjust to changes in light intensity. For example, people whose eyes cannot quickly adjust to the darkness of a movie theater or are temporarily blinded by the glare of headlights at night probably have night blindness.

**night shift**

See *third shift*.

**night vision**

See *scotopic vision*.

**night vision goggles (NVG)**

A light image intensifying device for enabling an individual to see terrain, objects, or other items of interest at very low light levels.

**NIH**

See *National Institutes of Health*.

**NIHL**

See *noise-induced hearing loss*.

**nimbostratus**

A dark, gray cloud characterized by more or less continuously falling precipitation. It is not accompanied by lightning, thunder, or hail.

**nine-foot contour line**

A meandering line not necessarily on the channel edge at which a depth of 9 feet is obtained at river stage low water reference plane.

**Nineteenth Amendment**

Known as the women's suffrage amendment to the U.S. Constitution, it provides that the right of citizens of the U.S. to vote shall not be denied or abridged by the U.S. or by any state on account of sex. The 19th Amendment was ratified in 1920.

**Ninth Amendment**

This amendment to the U.S. Constitution provides that the enumeration in the Constitution of certain rights, shall not be construed to deny or disparage others retained by the people.

**NIOSH**

See *National Institute for Occupational Safety and Health*.

**nip point**

The nearest point of intersection or near contact of two oppositely rotating circular surfaces or a rotating circular surface and a planar surface.

**nipple**

(1) A projection from the proximal center of the breast, usually of different hue and texture than normal flesh and which, in the female, provides the terminal milk duct outlets. (2) Any structure resembling or serving a function similar to the human nipple.

**NIPTS**

See *noise-induced permanent threshold shift*.

**NIST**

National Institute of Standards and Technology (formerly the National Bureau of Standards).

**nit**

A unit of luminance, equal to 1 candela/m<sup>2</sup>.

**nitrate**

A compound containing nitrogen which can exist in the atmosphere or as a dissolved gas in water and which can have harmful effects on humans and animals. Nitrates in water can cause severe illness in infants and cows.

**nitric oxide (NO)**

A gas formed by combustion under high temperature and high pressure in an internal combustion engine. It changes to nitrogen dioxide (NO<sub>2</sub>) in the ambient air and contributes to photochemical smog.

**nitrification**

The process whereby ammonia in wastewater is oxidized to nitrite and then to nitrate by bacterial or chemical reactions.

**nitrotriacetate acid (NTA)**

A compound being used to replace phosphates in detergents.

**nitrite**

(1) An intermediate in the process of nitrification. (2) Nitrous oxide salts used in food preservation.

**nitrogen (N<sub>2</sub>)**

A chemical element, atomic number 7, atomic weight 14.007, symbol N. A colorless, odorless, and chemically reactively inert gas. Makes up approximately 78-79% of the earth's atmosphere. Also, *gaseous nitrogen* or *GN<sub>2</sub>*.

**nitrogen dioxide (NO<sub>2</sub>)**

The result of nitric oxide combining with oxygen in the atmosphere. A major component of photochemical smog.

**nitrogen fixation**

The utilization of atmospheric nitrogen to form chemical compounds. In nature this is accomplished by bacteria resulting in the ability of plants to synthesize proteins.

**nitrogen narcosis**

A condition, due to breathing of nitrogen gas under high pressures, whose symptoms range from joviality and lack of concern, to drowsi-

ness and weakness, to unconsciousness and death, depending on the pressure and duration of exposure. Sometimes referred to as *rapture of the deep/depths*. See also *inert gas narcosis*.

**nitrogen oxide (NO<sub>x</sub>)**

Product of combustion from transportation and stationary sources and a major contributor to the formation of ozone in the troposphere and acid rain deposition.

**nitrogenous wastes**

Animal or vegetable residues that contain significant amounts of nitrogen.

**NITTS**

See *noise-induced temporary threshold shift*.

**NLRB**

See *National Labor Relations Board*.

**nm**

Nanometer (common unit for absorbance used in spectroscopy).

**N/m<sup>2</sup>**

Newtons per square meter.

**NMOG**

See *nonmethane organic gas*.

**NMR**

Nuclear magnetic resonance.

**NNI**

See *noise and number index*.

**NOAA**

National Oceanic and Atmospheric Administration.

**NOAEL**

See *nonobserved-adverse-effect-level*.

**no brain rule**

*(slang)* A task design guideline that the workplace should prevent the worker from getting hurt even if he/she doesn't think before acting.

**no eyewitness rule**

The principle by which one who is charged with the burden of showing freedom from contributory negligence is assumed to have acted with due care for his/her own safety in the absence of eyewitnesses or of any obtainable evidence to the contrary.

**no-fault auto insurance**

Type of insurance in which claims for personal injury (and sometimes property dam-

age) are made against the claimant's own insurance company (no matter who was at fault) rather than against the insurer of the party at fault. Under such state "no-fault" statutes only in cases of serious personal injuries and high medical costs may the injured bring an action against the other party of his/her insurer. No-fault statutes vary from state to state in terms of scope of coverage, threshold amounts, threshold types (e.g., monetary or verbal), etc.

**no-fire level**

The maximum direct current or RF energy at which an electroexplosive initiator shall not fire with a reliability of 0.999 at a confidence level of 95 percent as determined by a Brucceton test method and shall be capable of subsequent firing within the requirements of performance specifications. *See also Bruce-ton test method.*

**no gyro approach**

*Aviation.* A radar approach vector provided in case of a malfunctioning gyro-compass or directional gyro. Instead of providing the pilot with headings to be flown, the controller observes the radar track and issues control instructions "turn right/left" or "stop turn" as appropriate.

**no-observed-effect level**

In dose-response experiments, the experimental exposure level representing the highest level tested at which no effects at all were demonstrated.

**noble gas**

A gas that is either completely nonreactive or reacts only to a very limited extent with other elements. The noble gases are helium, argon, neon, krypton, xenon, and radon.

**NOC**

*See not otherwise classified.*

**noctilucent cloud**

A wavy, thin, blue-to-white cloud that is best seen at twilight in polar latitudes. It forms at altitudes about 80 to 90 kilometers above the surface.

**nocturnal**

Pertaining to a species or individual who prefers to be active at night.

**nocturnal inversion**

*See radiation inversion.*

**nodal point (of the eye)**

An imaginary midpoint in the eyeball at which light rays from any point in the visual field will intersect the visual axis.

**node**

(1) A junction. (2) A point or region of minimum or zero amplitude in a periodic system.

**node of Ranvier**

A gap in the myelin sheath of a nerve fiber in which the axon membrane is exposed. Enables the neural impulse to jump from node to node, providing for faster transmission.

**NOEL**

No-observable-effect level.

**noise**

(1) *Acoustics.* Commonly defined as unwanted sound and is usually expressed in decibels on the A scale (dBA), which is the scale thought to most approximate human hearing. Noise is characterized by both frequency (pitch) and pressure (intensity). (2) *Instrument.* Any unwanted electrical disturbance or spurious signal which modifies the transmission, measurement, or recording of desired data. An output signal of an instrument that does not represent the variable being measured or the variation in the signal from an instrument that is not caused by variations in the concentration of the material being measured.

**noise and number index (NNI)**

An index used for rating the noise environment near airports and the noise associated with aircraft flyby.

**noise cancellation**

An active noise reduction technique using a device which monitors an incoming signal with noise and produces an opposing signal prior to passing the signal to the observer.

**noise contour**

A continuous line on a plot plan or map which connects all points of a specified noise level (such as 85 dBA).

**noise control**

The process of achieving a more nearly acceptable environment through the use of any noise reducing techniques.

**noise criterion curve (NCC)**

Any of several sets of criteria for providing a single number rating the acceptability of continuous environmental noise, based on curves of noise intensity or sound pressure level vs. frequency. Ratings are given for the noise criterion curve which is not exceeded. Each curve is named for the dB level where the curve crosses the 2-kHz point.

**noise exposure**

(1) The cumulative amount of acoustic stimulation which reaches the ear of an individual over some specified period of time. (2) Exposure to any unwanted sound. Overexposure to occupational noise in the United States is considered to be 90 dBA over an 8-hour time-weighted average (TWA).

**noise-induced hearing loss (NIHL)**

A progressive hearing loss that is the result of exposure to noise, generally of the continuous type over a long period of time, as opposed to acoustic trauma, which results in immediate hearing loss.

**noise-induced permanent threshold shift (NIPTS)**

A permanent hearing loss due to extremely high noise exposure levels.

**noise-induced temporary threshold shift (NITTS)**

A temporary hearing loss due to high noise exposure levels.

**noise level**

For airborne sound, unless otherwise specified to the contrary, noise level is the weighted sound pressure level, called sound level, the weighting of which must be indicated (e.g., A, B, or C weighting). *See also sound level.*

**noise margin**

The margin between the worst case noise level and logic circuitry threshold.

**noise meter**

*See sound level meter.*

**noise nuisance**

An environmental problem consisting of human activities that arise from unreasonable or unlawful use by a person of his/her own property, obstructing or injuring others' rights, and producing material nuisance or discomfort presumed by the law to result in damage.

**noise pollution**

An amount of noise in the environment considered to be excessive by the majority of the population.

**noise rating number**

The perceived noise level of specified acoustic conditions that is tolerable.

**noise reduction**

The reduction in the sound pressure level of a noise, or the attenuation of unwanted sound by any means.

**noise reduction coefficient (NRC)**

The average sound absorption coefficient for a material over the logarithm of frequency in the range from 256 to 2048Hz.

**noise reduction rating (NRR)**

(1) A measure of the effectiveness of a given hearing protector, usually expressed in decibels. Assuming a complete and perfect fit, the NRR is the difference between the sound pressure levels outside the ear and those inside the ear. (2) A single number noise reduction factor in decibels, determined by an empirically derived technique which takes into account performance variation of protectors in noise reducing effectiveness due to differing noise spectra, fit variability, and the mean attenuation of test stimuli at the one-third octave band test frequencies.

**noise suppressor**

An electronic circuit which is capable of automatically inhibiting the amplifier of a radio receiver to eliminate background noise when no signal is being received.

**noisy shoulder**

*(slang)* Emitting a grating noise on elevation or depression of the shoulder. Often due to a snapping tendon over the scapula.

**nolo contendere**

Latin phrase meaning "I will not contest it." A plea in a criminal case which has a similar legal effect as pleading guilty.

**Nomex<sup>®</sup>**

A fire-resistant material used for clothing and other industrial applications.

**nominal bandwidth**

The range between the specified upper and lower cutoff frequencies of a system.



**nominal damages**

A trifling sum awarded to a plaintiff in an action, where there is no substantial loss or injury to be compensated, but still the law recognizes a technical invasion of his/her rights or a breach of the defendant's duty, or in cases where there has been a real injury, the plaintiff's evidence entirely fails to show its amount.

**nominal group technique (NGT)**

A method for generating innovative product ideas in which the individuals within the group communicate verbally with each other only at specified periods of time, using their individual creativity the remainder of the time.

**nominal scale**

A basic measurement scale in which items are categorized or classified using only labeling methods.

**nomograph**

A chart in the form of linear scales which represents an equation containing a number of variables so that a straight line can be placed across them, cutting the scales at values of the variables satisfying the equation and yielding an answer to that for which one is solving.

**nomological validity**

An aspect of construct validity concerned with the fit between theoretical postulates and empirical data.

**NON**

Notice of noncompliance. *See violation notice.*

**nonaccidental injury**

Any injury which cannot be traced to a specific accident.

**nonadaptive response**

A reaction to a situation which does not support continued survival.

**nonasbestiform fiber**

A fibrous material which contains no asbestos.

**nonattainment area**

Geographic area which does not meet one or more of the National Ambient Air Quality Standards (NAAQS) for the any of the EPA's listed criteria pollutants designated under the

Clean Air Act. *See also NAAQS and criteria pollutants.*

**nonauditory effects of noise**

(1) Effects from exposure to noise, such as stress, fatigue, reduction in work efficiency, etc. (2) Any physiological or psychological effect of noise other than via the auditory system.

**nonballistic movement**

*See controlled movement.*

**non-blackbody**

Any surface which reflects at least some of the radiation impinging upon it.

**non-bulk packaging**

A packaging which has a) a maximum capacity of 450 L (119 gallons) or less as a receptacle for a liquid; b) a maximum net mass of 400 kg (882 pounds) or less and a maximum capacity of 450 L (119 gallons) or less as a receptacle for a solid; or c) a water capacity of 454 kg (1000 pounds) or less as a receptacle for a gas as defined in 49 CFR 173.115.

**non-causal association**

A statistical association in which no cause-and-effect relationship is apparent between two variables.

**noncertified color additive**

Any of a category of substances which are approved by the FDA for cosmetic use without special safety testing.

**noncoincidental peak-day flow**

*Gas Industry.* The largest volume of gas delivered to a particular customer by a pipeline company in a single day during the year.

**noncollision accident**

A motor vehicle accident which does not involve a collision. Non-collision accidents include jackknives, overturns, fires, cargo shifts and spills, and incidents in which trucks run off the road.

**noncollision crash**

A class of crash in which the first harmful event does not involve a collision with a fixed object, non-fixed object, or a motor vehicle. This includes overturn, fire/explosion, falls from a vehicle, and injuries in a vehicle.

**noncombustible**

Pertaining to a substance which is essentially incapable of burning or supporting a fire.

**noncommunity water system**

A public water system that is not a community water system, such as the water supply at a camp site or national park.

**noncompliance**

(1) *General*. Not in compliance with a specific or given requirement; or, to be found not in compliance with a specific or given requirement. Noncompliance may lead to fines and penalties under certain circumstances. (2) *U.S. Coast Guard*. Failure to comply with a standard or regulation issued under 46 U.S.C. Chapter 43, or with a section of the statutes.

**nonconventional pollutant**

Any pollutant that is not statutorily listed or which is poorly understood by the scientific community.

**noncurrent liabilities**

Noncurrent portion of long-term debt and of capital leases, advances to associated companies and other liabilities not due during the normal business cycle.

**noncyclic element**

A segment or step of a process or operation which doesn't occur within each cycle.

**nondestructive evaluation (NDE)**

Any testing, inspection, or evaluation that does not cause harm or impair the usefulness of the object being tested. *Nondestructive testing (NDT)* often refers just to the test methods and test equipment with only a general reference to materials and/or parts. *Nondestructive inspection (NDI)* relates to specific written requirements, procedures, personnel, standards, and controls for the testing of a particular material of a specific part. *Nondestructive evaluation (NDE)* is concerned with the decision-making process, the determination of the meanings of the results, of the final acceptance or rejection of the material or part, and may be qualitative or quantitative.

**nondestructive inspection (NDI)**

See *nondestructive evaluation*.

**nondestructive testing (NDT)**

See *nondestructive evaluation*.

**nondetects**

Chemicals that are not detected in a particular sample above a certain limit. This limit usually will be the quantitation limit for the chemical in that sample. (Note, however, that

it is possible to detect and estimate concentrations of chemicals below the quantitation limit but above the detection limit.)

**nondeterministic**

Pertaining to any event or condition which cannot be reliably predicted given certain prior events and currently known laws.

**nondisabling injury**

Any injury not resulting in death, permanent disability, or temporary total disability.

**nondispersive infrared (NDIR)**

A measurement principal that can be employed to measure the airborne concentration of some materials (e.g., CO, CO<sub>2</sub>, etc.) using an infrared source and photocell to determine the absorption of the IR radiation, which is dependent on contaminant concentration in the sample.

**nondisruptive**

Pertaining to an activity which does not interfere with any other ongoing activity.

**nonearthen shore**

A structure built of stone, brick, concrete, or other building materials, that borders a body of water and that is not otherwise classified.

**nonfatal accident**

A motor vehicle traffic accident that results in one or more injuries, but no fatal injuries.

**nonfatal alcohol involvement crash**

Alcohol-related or alcohol-involved if police indicate on the police accident report that there is evidence of alcohol present. The code does not necessarily mean that a driver, passenger, or nonoccupant was tested for alcohol.

**nonfatal casualty**

*Rail Operations*. Injuries and occupational illnesses incurred during railroad operations and maintenance procedures.

**nonfatal injury**

A nonfatal injury is any traffic accident injury other than a fatal injury.

**nonfatal injury accident**

(1) A nonfatal injury accident is a traffic accident that results in nonfatal injuries. (2) Accident in which at least one person is injured, and no injury results in death.

**nonfatal injury accident rate**

The nonfatal injury accident rate is the number of nonfatal injury accidents per 100 million vehicle miles of travel.

**nonfatal (most serious) injured**

Nonfatally injured persons whose injuries are classified as incapacitating (as defined in the "Manual On Classification of Motor Vehicle Traffic Accidents," American National Standards Institute (ANSI) D16.1-1989). States may receive information about these injuries on the accident report forms as incapacitating, incapacitating injury, incapacitated, disabled, carried from scene, severe injury, critical nonfatal, major injury, or other similar terms.

**nonfatally injured person**

A nonfatally injured person is one who suffers a nonfatal injury in either a fatal or nonfatal injury traffic accident.

**nonfatally injured persons rate**

The nonfatally injured persons rate is the number of nonfatally injured persons per 100 million vehicle miles of travel.

**nonfeasance**

Nonperformance of some act which a person is obligated or has the responsibility to perform.

**non-fixed guideway directional route miles**

*Rail Operations.* The mileage operated by non-rail modes on fixed routes and schedules in mixed traffic rights-of-way.

**non-fixed route**

Service not provided on a repetitive, fixed-schedule basis along a specific route to specific locations. Demand response is the only non-fixed route mode.

**nonflammable**

A material or substance that will not burn readily or quickly.

**nonfriable**

With regard to asbestos, a material which contains more than 1% asbestos (by weight) and which cannot be crumbled by hand pressure when dry.

**nonhub**

*Aviation.* A community enplaning less than 0.05 percent of the total enplaned passengers in all services and all operations in all communities within the 50 States, and District of Columbia, and other U.S. areas designated by the Federal Aviation Administration.

**nonincendive**

A device that will not ignite the group of gases or vapors for which it is rated. It is similar to *intrinsically safe*, but does not include failure tolerance ratings. It is typically used in rating electrical products for use in Class I, Division 2 locations only. *See also intrinsically safe and Class I, Division 2 location.*

**nonindigenous species**

Any species or other viable biological material that enters an ecosystem beyond its historic range, including any such organism transferred from one country into another.

**noninteractive window**

An active window which is not receptive to user input.

**noninterlaced display**

A visual display in which the entire display is not receptive to user input.

**noninvasive**

Pertaining to those clinical or experimental procedures which do not require breaking the skin, insertion into any body cavity except the mouth, and which do not cause extreme discomfort.

**nonionic detergent**

Any detergent with molecules which don't ionize in water.

**nonionizing radiation**

Electromagnetic radiation, such as ultraviolet, laser, infrared, microwave, and radio-frequency radiation, that does not cause ionization.

**nonisolated intermediates**

*TSCA.* (1) Chemicals that are both manufactured and partially or totally consumed in the chemical reaction process. (2) Chemicals intentionally present in order to affect the rate of chemical reactions by which other chemical substances or mixtures are being manufactured.

**nonlinear correlation**

A correlation which does not follow the linear relationship  $Y = a + bX$ . Also referred to as *curvilinear correlation*.

**nonlinear damping**

Damping due to a force that is not proportional to velocity.

**nonlinear function**

Any function which can't be expressed in the form  $y = a_1x_1 + a_2x_2 + \dots + a_nx_n$ .

**nonlinear regression**

Any type of regression involving a function or curve which has other than a directly or inversely proportional relationship between variables. Also referred to as *curvilinear regression*.

**nonloading secondary task**

A secondary task which may be attended to when the operator's primary task does not require attention.

**nonmetallic sheathed cable**

A factory assembly of two or more insulated conductors having an outer sheath of moisture-resistant, flame-retardant, nonmetallic material. Nonmetallic sheathed cable is manufactured in the following types: a) *Type NM*. The overall covering has a flame-retardant and moisture-resistant finish. b) *Type NMC*. The overall covering is flame-retardant, moisture-resistant, fungus-resistance, and corrosion-resistant.

**nonmethane organic gas (NMOG)**

According to the Clean Air Act: The sum of nonoxygenated and oxygenated hydrocarbons contained in a gas sample, including at a minimum, all oxygenated organic gases containing 5 or fewer carbon atoms (i.e., aldehydes, ketones, alcohols, ethers, etc.) and all known alkanes, alkenes, alkynes, and aromatics containing 12 or fewer carbon atoms. To demonstrate compliance with a NMOG standard, NMOG emissions shall be measured in accordance with the "California Non-Methane Organic Gas Test Procedures". In the case of vehicles using fuels other than base gasoline, the level of NMOG emissions shall be adjusted based on the reactivity of the emissions relative to vehicles using base gasoline.

**nonmetropolitan**

Households not located within Metropolitan Statistical Areas (MSA) as defined by the U.S. Office of Management and Budget.

**nonmonetary incentive**

Any incentive plan not involving monetary compensation, such as improved working conditions and social benefits.

**nonmonotonic**

Pertaining to a function which contains cyclic or both increasing and decreasing aspects within the region of interest.

**nonmotorist**

Any person who is not an occupant of a motor vehicle in transport and includes the following: a) pedestrians, b) pedal cyclists, c) occupants of parked motor vehicles, d) others such as joggers, skateboard riders, people riding on animals, and persons riding in animal-drawn conveyances.

**nonmotorist location**

The location of nonmotorists at time of impact. Intersection locations are coded only if nonmotorists were struck in the area formed by a junction of two or more traffic ways. Nonintersection location may include nonmotorists struck on a junction of a driveway/alley access and a named traffic way. Nonmotorists who are occupants of motor vehicles not in transport are coded with respect to the location of the vehicle.

**nonobserved-adverse-effect-level (NOAEL)**

In dose-response experiments, the experimental exposure level representing the highest level tested at which no adverse effects were demonstrated.

**nonoccupant**

Any person who is not an occupant of a motor vehicle (e.g., pedestrian or pedal cyclist), or who is an occupant of a motor vehicle which is not in transport.

**nonoperating income and expense**

Interest income and expense, unusual foreign exchange gains or losses, and capital gains or losses in disposition of property and equipment.

**nonparametric**

Statistical methods that do not assume a particular distribution for the population under consideration.

**nonperformance**

Neglect, failure, or refusal to do or perform an act stipulated or contracted to be done.

**nonpermit confined space**

A confined space that does not contain or, with respect to atmospheric hazards, have the potential to contain any hazard capable of causing death or serious physical harm.

**nonpilot personnel**

May include any of the following personnel: maintenance, servicing, inspection, rules, regulations, standards, weather service, airport management, production design, ground signalman, passenger, driver of vehicle, flight engineer, radio operator, flight instructor on ground, operational supervisor, air traffic control, airway facilities, pilot of another aircraft, ground crewman, spectator, third pilot, navigator, flight attendant, dispatching and other flight personnel.

**nonpoint source**

Pollution sources which are diffuse and do not have a single point of origin or are not introduced into a receiving stream from a specific outlet. The pollutants are generally carried off the land by stormwater runoff. The commonly used categories for nonpoint sources are agriculture, forestry, urban, mining, construction, dams and channels, land disposal, and salt water intrusion.

**nonpolar compound**

A compound for which the positive and negative electrical charges coincide and the molecules do not ionize in solution and impart electrical conductivity.

**nonpolar solvents**

The aromatic and petroleum hydrocarbon group of compounds.

**nonport terminal**

Waterfront terminals individually located along navigable rivers, having place identity but not otherwise classifiable as a regional distribution or subregional port.

**nonprecision approach procedure**

A standard instrument approach procedure in which no electronic glideslope is provided.

**nonprecision instrument runway**

A runway with an approved or planned straight-in instrument approach procedure which has no existing or planned precision instrument approach procedure.

**nonpriority U.S. mail**

Mail bearing postage for surface transportation that goes by air on a space available basis at rates lower than those fixed for priority (i.e., air) mail.

**nonradar approach control tower**

An airport traffic control tower (ATCT) providing approach control service without the use of radar. In other words, an ATCT at which air traffic control specialists are permitted to provide manual approach control service, as well as to handle takeoffs and landings.

**nonrandom sample**

Any sample taken in such a manner that some members of the defined population are more likely to be sampled than others.

**nonrapid eye movement sleep**

Any phase of sleep in which rapid eye movements are not present. Also called *non-REM sleep*.

**nonrecoverable light loss factor**

Any light loss factor due to equipment or other conditions which cannot be remedied through normal maintenance, specifically including temperature, lamp position/tilt, equipment operation, luminaire surface deterioration, line voltage, and ballast characteristics.

**nonrecurring items**

Discontinued operations, extraordinary items, and accounting changes in income or loss.

**nonregulated trucking**

A carrier which is exempt from economic regulation, e.g., exempt agricultural shipments and private trucking operations.

**nonrepetitive**

Pertaining to an operation, process, or job which is frequently changed or altered in some way.

**nonresident commercial driver's license**

A CDL (commercial driver's license) issued by a state to an individual domiciled in a foreign country.

**nonrevenue freight**

Company materials and supplies transported without charge in freight trains of a particular railroad for its own use.

**nonroad engine**

Under the Clean Air Act: An internal combustion engine (including the fuel system) that is not used in a motor vehicle or a vehicle used solely for competition.

**nonroad vehicle**

Under the Clean Air Act: A vehicle that is powered by a nonroad engine and that is not a motor vehicle or a vehicle used solely for competition.

**nonroutine respirator use**

The wearing of a respirator when carrying out a special task that occurs infrequently.

**nonscheduled air transportation**

Establishments primarily engaged in furnishing nonscheduled air transportation. Also included in this industry are establishments primarily engaged in furnishing airplane sightseeing services, air taxi services and helicopter passenger transportation services to, from, or between local airports, whether or not scheduled.

**nonscheduled service**

Revenue flights, such as charter flights, that are not operated in regular scheduled service, and all nonrevenue flights incident to such flights.

**non-self-propelled**

Vessels not containing within themselves the means for their own propulsion.

**nonserious violation citation**

Under OSHA citation criteria, a category of citation issued when a situation would affect worker safety or health but would not cause death or serious physical harm.

**nonstandard**

Differing from established specifications, conditions, or requirements.

**nonstationary**

Pertaining to a condition or function where the mean, spectral density, and probability distribution vary with time.

**nonstationary time series**

A stochastic time series whose characteristics change with an integral increase in the time axis.

**nontoxic**

A material is nontoxic when experience and/or experiments have failed to cause physiological, morphological, or functional changes which adversely affect the health of man or animal.

**non-train incident**

An event arising from railroad operations but not from the movement of on-track equipment, which does not exceed the reporting

threshold, and results in a death, a reportable injury, or a reportable occupational illness.

**nontrespassers**

*Rail Operations.* A person who is lawfully on any part of railroad property which is used in railroad operations or a person who is adjacent to railroad premises when injured as a result of railroad operations.

**nontrespassers (Class D)**

*Rail Operations.* Persons lawfully on that part of railroad property that is used in railroad operation (other than those herein defined as employees, passengers, trespassers, or contractor employees) and persons adjacent to railroad premises when they are injured as the result of the operation of a railroad. This class also includes other persons on vessels or buses, whose use arises from the operation of a railroad.

**nonutility unit**

Under the Clean Air Act, a unit other than a utility unit.

**nonvehicle maintenance**

All activities associated with facility maintenance, including administration; repair of buildings, grounds, and equipment as a result of accidents or vandalism; operation of electric power facilities; and maintenance of vehicle movement control systems; fare collection and counting equipment; structures, tunnels, and subways; roadway and track; passenger stations, operating station buildings, grounds and equipment; communication systems; general administration buildings, grounds, and equipment; and electric power facilities.

**nonvessel operating common carrier (NVOCC)**

(1) A company operating as a freight forwarder involved in ocean-going vessel freight only. (2) A form of freight consolidation for the selling of space on ocean-going vessels.

**nonvessel owning carrier (NVOC)**

A firm which consolidates and disperses international containers that originate at, or are bound for, inland ports.

**nonvolatile**

Material that does not evaporate at ordinary temperature.

**nonwoven fabric**

Any type of cloth produced by a semirandom arrangement of fibers, whether synthetic or



natural, held together by adhesives or needling.

**NOPPA**

National Ocean Pollution Planning Act of 1978.

**noradrenalin**

See *norepinephrine*.

**nordo**

See *lost communications*.

**norepinephrine**

A catecholamine which serves both as a hormone and a neurotransmitter. Also referred to as *noradrenalin* and *arterenol*. See also *catecholamine*.

**NORM**

See *naturally occurring radioactive material*.

**normal (N)**

(1) That which conforms to some standard; typical or commonplace. (2) A solution containing one gram-equivalent weight per liter of solution. (3) Perpendicular to a vector, plane, or other entity. (4) Pertaining to or having a Gaussian (normal) distribution. (5) The moving average of temperature which is recognized as a standard for a given location.

**normal distribution**

(1) In statistical analysis, that distribution of events which occurs most often and is typically represented graphically as a bell-shaped curve. (2) If the mean, median, and mode are the same in a set of data, the data assume a completely symmetrical, bell-shaped distribution which is called a normal distribution. This distribution is characterized by a maximum number of occurrences at the center or mean point, a progressive decrease in the frequency of occurrences with distance from the center, and a symmetry of distribution on either side of the center. Also called the *Gaussian distribution*.

**normal effort**

That amount of effort required or expended in manual work by an average operator with average skill and attention to the task.

**normal element time**

A statistically determined element time based on the expected or required performance by an average qualified worker working at a normal pace.

**normal event**

As pertains to fault tree analysis (FTA) and/or the Management Oversight and Risk Tree (MORT), an event which occurs as a normal function in system operation that may or may not present a risk of hazard to that system. Represented graphically by a house shape in FTA and a scroll shape in MORT.

**normal fault**

*Seismology*. A fault characterized by predominantly vertical displacement in which the hanging wall is moved downward with respect to the footwall of the fault. Generally, this kind of fault is a sign of tectonic extension.

**normal humidity**

A range of 40 to 80% relative humidity.

**normal line of sight**

That line of sight which is assumed by an individual in a relaxed posture and is typically directed approximately 10° to 15° below the horizontal plane.

**normal operator**

An operator who is adapted to his/her position and attains normal performance when using prescribed methods and working at a normal pace.

**normal pace**

The manual productivity level required or achieved by a normal effort.

**normal performance**

That output expected from an average qualified operator working with prescribed methods at an average pace.

**normal pool**

The stage of an artificially impounded water body that prevails for the greater part of the year.

**normal pool elevation**

Height in feet above sea level at which a section of the river is to be maintained behind the dam.

**normal pool stage**

That level of the river maintained by the desired dam operations.

**normal range**

In biological testing, the range of values of a biological analyte that would be expected without exposure to the environmental contaminant in the workplace.

**normal saline**

A solution of 0.9 g of sodium chloride in 100 ml of water, which is isotonic with body fluids.

**normal temperature and pressure**

In the practice of industrial hygiene, normal conditions are considered to be 25°C (77°F) and 760 mm pressure.

**normal time**

That temporal period required for a qualified worker to perform some task or operation while working at a normal pace without personal, fatigue, or other allowances. Also referred to as *base time* or *leveled time*.

**normal working area**

The approximately planar region of a work surface which is bounded distally by the arc swept out by a worker's extended fingertips and proximally by the body while pivoting the shoulder laterally (lateral rotation) in the normal working position. *See also normal working area, one-handed; normal working area, two-handed; normal working volume; and normal working posture.*

**normal working area, one-handed**

The normal working area for only the right or only the left arm.

**normal working area, two-handed**

The normal working area for that overlapping area between the two individual one-handed working areas.

**normal working position**

*See normal working posture.*

**normal working posture**

The typical posture assumed by a worker for a given task, generally taken as a standing or sitting position, with the upper arm hanging in a relatively stationary position close to the body and the elbow flexed at about 90°.

**normal working volume**

The three-dimensional region bounded proximally by a worker's body and distally by the arc swept by the fingertips of one or both hands with a range of elbow flexion and/or body rotation about its vertical axis.

**normalize**

To carry out a transformation on a variable to obtain a linear function, a normal distribution,

or a desired range, or to have the sum of the parts equal 1.0.

**normalized exposure rate**

*See intake.*

**normative**

Pertaining to or the establishment of a norm or standard for evaluation.

**normotonic**

Having normal muscle tone.

**normoxic**

Having a normal oxygen level.

**northeaster**

A name given to a strong, steady wind from the northeast that is accompanied by rain and inclement weather. It often develops when a storm system moves northeastward along the coast of North America.

**northern lights**

The aurora borealis. *See aurora.*

**nose**

(1) The fleshy protuberance in the center of the face which contains the nostrils and associated airway passages through which breathing occurs. Air breathed in through the nose is warmed and filtered, as opposed to that breathed in through the mouth. The nostrils, which form the external entrance of the nose, lead into two nasal cavities, which are separated from each other by a partition (the nasal septum) formed of cartilage and bone. Three bony ridges project from the outer wall of each nasal cavity and partially divide the cavity into three air passages. At the back of the nose these passages lead into the pharynx. The passages also are connected by openings with the paranasal sinuses. One of the functions of the nose is to drain fluids discharged from the sinuses. The nasal cavities also have a connection with the ears by the eustachian tubes, and with the region of the eyes by the nasolacrimal ducts. The interior of the nose is lined with mucous membrane. Most of this membrane is covered with minute hairlike projections called cilia. Moving in waves, these cilia sweep out from the nasal passages the nasal mucus, which may contain pollen, dust, and bacteria from the air. The mucous membrane also acts to warm and moisten the inhaled air. High in the interior of each nasal cavity is a small area of mucous membrane

that is not covered with cilia. In this pea-sized area are located the endings of the nerves of smell, commonly called the olfactory receptors. These receptors sort out odors. Unlike the taste buds of the tongue, which distinguish only between four different tastes (sweet, sour, salt, and bitter), the olfactory receptors can detect innumerable different odors. This ability to smell contributes greatly to what we usually think of as taste because much of what we consider flavor is really odor. (2) That portion of a tread of a stairway projecting beyond the face of the riser immediately below. (3) The front or beginning of an air frame.



*The nose not only allows us to breath cleaned and warmed air, it also provides us with the ability to sense an infinite number of differing odors.*

**nose breadth**

The maximum horizontal linear distance across the nose, at whatever level it occurs. Measured with the facial muscles relaxed and without compressing tissue.

**nose clip**

Any spring device which pinches off the nostrils to prevent entry of water or air.

**nose dive**

*Transit (slang).* Trailer tipped forward on its nose.



*The nose section of a Boeing 747 aircraft*

**nose height**

The linear vertical distance from subnasale to sellion.

**nose height – breadth index**

The percentage value of the ratio between the nose height and the nasal breadth.

**nose length**

The linear distance from sellion to pronasale. Measured parallel to the ridge of the nose.

**nose protrusion**

The linear horizontal distance from subnasale to pronasale. Measured with the individual standing or sitting erect, with the facial muscles relaxed.

**nosebleed**

Bleeding from the nose for any number of reasons (e.g., injury, irritation, etc.). Also called *epistaxis*.

**nose'er in**

*Maritime Navigation (slang).* To land by putting the bow of the boat into the bank.

**nosocomial disease**

A disease with its source in a hospital and which is contracted as a result of being there.

**nostril**

*See external naris.*

**not otherwise classified (NOC)**

A category of items including relatively infrequent dissimilar items.

**not paved surface**

All surfaces other than asphalt or concrete.

**NOTAM**

See *notice to airmen*.

**notary public**

(1) A public officer whose function is to administer oaths; to attest and certify, by his/her hand and official seal, certain classes of documents, in order to give them credit and authenticity in foreign jurisdictions; to take acknowledgements of deeds and other conveyances, and certify the same; and to perform certain official acts, chiefly in commercial matters, such as the protesting of notes and bills, the noting of foreign drafts, and marine protests in cases of loss or damage. (2) One who is authorized by the state or federal government to administer oaths, and to attest to the authenticity of signatures.

**notch**

*Maritime Navigation.* A void or opening or any place where barge head logs do not meet, where they are not even with each other, or where no other barge is faced to a barge.

**notes and accounts receivable**

*Aviation.* Current notes and accounts receivable which are reasonably expected to be amortized within one year. These receivables include passenger receivables for air travel to be performed both by the selling carrier and other airlines, for which the related liabilities (to passenger or to the performing air carrier) are included in the "air traffic liabilities" account.

**notice and comment rulemaking**

See *informal rulemaking*.

**notice letter**

The EPA's formal notice to potentially responsible parties (PRPs) that CERCLA-related action will be taken at a site for which the PRP is considered responsible.

**notice of noncompliance (NON)**

See *violation notice*.

**notice of proposed rulemaking**

A public notice of proposed regulations required by law, which allows for public com-

ments and scheduling of public hearings. See also *advanced notice of proposed rulemaking*.

**notice of violation (NOV)**

A formal document completed by regulatory agencies as a result of established violations at or by a hazardous waste facility, transporter, or generator. This official notification is a legal document directing the violator to correct violations of existing environmental law(s) and may include or be followed by fines. See also *violation notice*.

**notice to airmen (NOTAM)**

*Aviation.* A notice containing information (not known sufficiently in advance to publicize by other means) concerning the establishment, condition, or change in any component (facility, service, or procedure of, or hazard to the national airspace system), the timely knowledge of which is essential to personnel concerned with flight operations.

**notice to mariners**

A bulletin or information to mariners issued by the Coast Guard. See also *public notice*.

**notices to airmen publication (NTAP)**

A publication issued every 14 days, designed primarily for the pilot, which contains current notice to airmen (NOTAM) information considered essential to the safety of flight as well as supplemental data to other aeronautical publications. The contraction NTAP is used in NOTAM text.

**NOV**

See *notice of violation*.

**nox**

A unit for measuring levels of illumination. Equals  $10^{-3}$  lux.

**NO<sub>x</sub>**

Oxides of nitrogen.

**noxious**

Pertaining to that which is harmful or poisonous.

**noy**

A unit used in the calculation of perceived noise level relative to the perceived noise level of random noise of bandwidth  $1000 \pm 90$  Hz at a sound pressure level of 40 dB, referenced to  $2 \times 10^{-4}$  microbar.

**Np**

See *néper*.

**np chart**

A graph or display, tracking over time, the number of nonconforming units in samples when the number of items in each sample is constant.

**NPA**

National Particleboard Association.

**NPAR**

Nonbinding Preliminary Allocation of Responsibility.

**NPDES**

See *National Pollution Discharge Elimination System*.

**NPL**

See *National Priorities List*.

**NPRM**

Noticed of proposed rulemaking. See *advanced notice of proposed rulemaking*.

**NPT**

National pipe thread.

**NPTS**

See *Nationwide Personal Transportation Survey*.

**NRC**

See *National Response Center*. See also *Nuclear Regulatory Commission*. See also *noise reduction coefficient*. Also, acronym for National Research Council.

**NRDC**

Natural Resources Defense Council.

**NRR**

See *noise reduction rating*.

**NRT**

See *National Response Team*.

**NRTL**

See *Nationally Recognized Testing Laboratory*.

**NSC**

See *National Safety Council*.

**NSF**

National Science Foundation.

**NSPS**

See *New Source Performance Standard*.

**NTA**

See *nitrotriacetic acid*.

**NTAP**

See *notices to airmen publication*.

**NTIS**

National Technical Information Service.

**NTP**

See *National Toxicology Program*. See also *normal temperature and pressure*.

**NTS**

See *National Transportation System*.

**NTSB**

See *National Transportation Safety Board*.

**nub**

An intentional knot or tangle in a fabric which gives it an irregular texture.

**nucha**

See *nape*.

**nuchale**

The lowest point in the midsagittal plane of the occiput that can be palpated among the muscles in the posterior-superior part of the neck.

**nuchale tubercle**

See *cervicale*.

**nuclear disintegration**

A process resulting in the change of a radioactive nucleus through the emission of alpha or beta particles.

**nuclear energy**

The energy released as the result of a nuclear reaction. The processes of fission or fusion are employed to create a nuclear reaction.

**nuclear fission**

A type of nuclear transformation characterized by the splitting of a nucleus into at least two other nuclei and the release of a relatively large amount of energy. See also *fission*.

**nuclear fuel cycle**

The operations defined to be associated with the production of electrical power for public use by any fuel cycle through utilization of nuclear energy.

**nuclear fusion**

The joining of a hydrogen nucleus with another hydrogen or heavier nucleus in a thermonuclear reaction to form heavier nuclei,



with the release of energy. More commonly referred to simply as *fusion*. See also *fission*.

**nuclear incident**

According to the Federal Atomic Energy Act of 1954: Any occurrence, including an extraordinary nuclear occurrence, within the United States causing, within or outside the United States, bodily injury, sickness, disease, or death, or loss of or damage to property, or loss of use of property, arising out of or resulting from the radioactive, toxic, explosive, or other hazardous properties of source, special nuclear, or byproduct material.

**nuclear magnetic resonance (NMR)**

See *magnetic resonance imaging*.

**nuclear power plant**

A facility that converts atomic energy into usable power; heat produced by a reactor makes steam to drive turbines which produce electricity.

**nuclear radiation spectrum**

The frequency distribution of nuclear or ionizing radiation with respect to energy.

**nuclear reaction**

A reaction which alters the energy, composition, or structure of an atomic nucleus.

**nuclear reactor**

A device in which a chain reaction is initiated and controlled, with the consequent production of heat. Typically utilized for power generation.

**Nuclear Regulatory Commission (NRC)**

A U.S. federal agency which regulates all commercial uses of nuclear energy, including the construction and operation of nuclear power plants, nuclear fuel reprocessing, research applications of radioactive materials, etc.

**nuclear winter**

Prediction by some scientists that smoke debris rising from massive fires resulting from nuclear war could enter the atmosphere and block out sunlight for weeks or months. The scientists making this prediction project a cooling of the earth's surface, and changes in climate which could, for example, negatively affect world agricultural and weather patterns.

**nucleic acids**

(1) A polymer of purine and pyrimidine bases, each chemically combined with a five-carbon

sugar and phosphoric acid. (2) Nucleic acids are found in the cells of all living tissue. They are extremely complex and of high molecular weight, containing phosphoric acid, sugars, and purine and pyrimidine bases. Two pentose sugars are involved as constituents of nucleic acids: ribose and deoxyribose. Thus are derived from the names of the nucleic acids ribonucleic acid (RNA) and deoxyribonucleic acid (DNA). The nucleic acids and their derivatives are of great importance in metabolism, and though all of their functions are not completely understood, they appear to be concerned with controlling the general pattern of metabolism and acting as catalysts in many chemical reactions within the cell. The synthesis of proteins by the nucleic acids are the intermediate steps in the metabolism of other foodstuffs. The nucleic acids are also of great biologic significance. For example, DNA and RNA are the chemical repositories of genetic information and therefore affect the transmission of individual characteristics and functions from cell to cell and also from individual persons to their offspring. See also *deoxyribonucleic acid (DNA)*.

**nucleon**

Common name for a constituent particle of the nucleus. It is applied to protons, neutrons, and any other particle found to exist in the nucleus.

**nucleotide**

One of a group of compounds obtained by hydrolysis of nucleic acids consisting of purine or pyrimidine bases linked to sugars, which in turn are esterified with phosphoric acid.

**nucleus**

(1) *Radiation*. The atomic nucleus; the small, centrally located, positively charged region of the atom that carries essentially all the mass. Except for the nucleus of ordinary (or light) hydrogen, which is a single proton, all atomic nuclei contain both protons and neutrons. (2) *Biology*. The structure within cells that contains chromosomes and one or more nucleoli. The nucleus contains large quantities of deoxyribonucleic acid (DNA), a nucleic acid that controls the synthesis of protein enzymes of the cytoplasm and also cellular reproduction. Because of its DNA content, the nucleus



is considered to be the control center of the cell. (3) *Anatomy*. A mass of gray matter in the central nervous system, especially such a mass marking the central termination of a cranial nerve.

**nucleus pulposus**

The viscous fluid in the center of an intervertebral disk.

**nuclide**

A general term referring to any nuclear species, either stable (of which there are about 270 in number) and unstable (of which there are about 500), of the chemical elements.

**nude**

(1) Having a minimal amount of clothing (e.g., underwear), in which many anthropometric measurements are taken. (2) Without clothing. Synonymous with *naked*.

**nude body dimensions**

Anthropometric measures which have been taken with a nude subject.

**nuisance**

(1) That activity which arises from the unreasonable, unwarranted, or unlawful use by a person of his/her own property, working obstruction or injury to the right of another, or to the public, and producing such material annoyance, inconvenience, and discomfort that the law will presume resulting damage. (2) Engaging in an unreasonable use of land so as to materially and substantially interfere with the use and enjoyment of the land of another.

**nuisance dust**

Airborne particulates which neither alter the architecture of the airspaces of the lungs nor produce scar tissue to a significant extent, and the tissue reaction they do produce is reversible. They are not recognized as the direct cause of a serious pathological condition. See also *inert dust*.

**null**

Having a quantity of zero; a nonexistent entity.

**null gravity**

See *microgravity*.

**null hypothesis**

The hypothesis about a population parameter to be tested. A statement proposing that there is no statistically significant difference with

respect to one or more given variables between two or more groups.

**numb**

Having an impaired ability or no ability to feel tactile sensations.

**number**

A symbol, as a figure or word, expressive of a certain value or a specified quantity.

**number facility**

The ability to perform basic arithmetic processing correctly within a reasonable time limit (e.g., add, subtract, multiply, and divide—individually or in combination).

**numbered vessel**

An undocumented vessel numbered by a state with an approved numbering system or by the Coast Guard under Chapter 123 of title 46, U.S.C.

**numbering system**

Any plan for the assignment of numeric values to items, cases, or events as a means for classification.

**numbness**

A paresthesia of touch insensibility in a part.

**numerical analysis**

The use of mathematical approximation techniques to solve problems.

**numerical control**

A method for precisely controlling the motions of a mechanical device, usually some type of machine tool, via a mathematical description of the object being manufactured.

**numerical display**

Any electrical display involving numbers, as on a panel or instrumentation. Also known as *digital display*.

**numerical weather prediction (NWP)**

Forecasting the weather based upon the solutions of mathematical equations by high-speed computers.

**numerous targets vicinity (location)**

*Aviation*. A traffic advisory issued by Air Traffic Control (ATC) to advise pilots that targets on the radar scope are too numerous to issue individually.

**nurse**

(1) A person who makes a profession of car-

ing for the sick, disabled, or enfeebled. (2) To care for a sick or disabled person or one unable to provide for his/her own needs. (3) To nourish at the breast.

**nurture**

A substance which nourishes.

**nutrient**

Any substance assimilated by living things that promotes growth. The term is generally applied to nitrogen and phosphorus in wastewater, but is also applied to other essential elements found in foodstuffs and soils.

**nutrition**

(1) The requirements and processes of the living body involved with activity, growth, maintenance, and repair. (2) The nourishment of the body by food. It includes all the processes by which the body uses food for energy, maintenance, and growth. Nutrition is particularly concerned with those properties of food that build sound bodies and promote health. In this sense, good nutrition means a balanced diet containing adequate amounts of the essential nutritional elements that the body must have to function normally. The essential ingredients of a balanced diet are proteins, vitamins, minerals, fats, and carbohydrates. The body can manufacture sugars from fats, and fats from sugars and protein, depending on the need. But it cannot manufacture proteins from sugars and fats. The most important constituents of proteins are the amino acids. These complex organic compounds of nitrogen play a vital role in nutrition. The best sources of complex proteins (e.g., proteins containing all the essential amino acids) are meat, fish, eggs, and dairy products. The amount of protein that the average person actually needs, however, is much smaller than that of popular opinion. Vitamins are special substances that are present, in varying amounts, in all food. Their absence from the diet can cause such diseases as beriberi (lack of vitamin B, or thiamine), pellagra (lack of the B vitamin niacin), and scurvy (lack of vitamin C, or ascorbic acid). The principal minerals needed by the body are calcium and phosphorus (to build bones and teeth) and iron (to assure a sufficient supply of erythrocytes). All three are plentiful in eggs, dairy products, lean meat, and enriched flour. The trace of iodine needed to prevent goiter is

easily provided by iodized table salt. The minute amounts of magnesium, manganese, and copper that are necessary are found in any balanced diet. For quick energy, the body should have sugars (carbohydrates) and starches, which the body converts into sugars. Fats and proteins can also provide energy and can be stored for future use, whereas sugars and starches cannot. Since the body can manufacture most of its own fat, fats are of secondary importance in a balanced diet.

**nutriture**

The status of the body in relation to nutrition.

**NVG**

See *night vision goggles*.

**NVLAP**

National Voluntary Laboratory Accreditation Program (part of the National Institute of Standards and Technology, NIST).

**NVOC**

See *nonvessel owning carrier*.

**NVOCC**

See *nonvessel operating common carrier*.

**NWP**

See *numerical weather prediction*.

**NWPA**

Nuclear Waste Policy Act of 1982 (Federal).

**nyctalgalia**

Pain that occurs only in sleep.

**nyctalopia**

See *nightblindness*.

**nylon**

Any of a set of long-chained amide polymers used in fabrics.

**nystagmogram**

A recording or display of nystagmus.

**nystagmograph**

An instrument for recording the movements of the eyeball in nystagmus.

**nystagmus**

Involuntary movement of the eyeballs often experienced by workers who continuously subject their eyes to abnormal or unaccustomed movements. The condition is often accompanied by headaches, dizziness, and fatigue. The most prevalent form of occupational nystagmus occurs in miners.

**nytophilia**

A preference for darkness or for night.

# O

## OA

See *outdoor air*.

## OA sound pressure level

See *overall noise*.

## oakie blower

An air scoop on the air intake used to increase power.

## OALT

See *operational acceptable level of traffic*.

## OAPCA

Organotin Antifouling Paint Control Act of 1988 (Federal).

## OBA

See *octave band analyzer*.

## obesity

That condition resulting from a prolonged condition in which caloric energy intake exceeds output, the excess being converted to fat and deposited within the body. This excessive accumulation of fat in the body leads to an increase in weight beyond that considered desirable with regard to age, height, and bone structure. Being "overweight" can affect physical and mental health. Too many extra pounds are a strain on the body, and can eventually shorten the span of life. Obesity is also unattractive, and this may create psychological problems. The overweight person is susceptible to a number of normally unnecessary complications. These include an overworked heart, shortness of breath, a tendency to arteriosclerosis and high blood pressure or to diabetes mellitus, chronic back and joint pains (from increased strain on joints and ligaments), a greater tendency to contract infectious diseases, and a reduced ability to exercise or enjoy sports.

## object

(1) *General*. Any physical entity which can be viewed or manipulated. (2) *Aviation*. Includes, but is not limited to aboveground structures, people, equipment, vehicles, natural growth, terrain, and parked aircraft. (3) *Computing*. Any structure which can be displayed or manipulated by a computer system.

## object class

*Transit*. As the term is used in expense classification, an object is an article or service obtained. An object class is a grouping of expenses on the basis of goods or services purchased. The object classes include salaries and wages, fringe benefits, services, materials and supplies, and other expenses as defined in Section 7.2, Volume II of the Uniform System of Accounts (USOA).

## object free area (OFA)

*Aviation*. A two-dimensional ground area surrounding runways, taxiways, and taxi lanes which is clear of objects except for Navigation Aids (NAVAIDs) and objects whose location is fixed by function.

## objection

Act of objecting. That which is, or may be presented in opposition. An adverse reason or argument. A reason for objecting or opposing. A feeling of disapproval.

## objective

Pertaining to a measure or aspect which can be observed or evaluated by more than one person independently.

## objective basic element

Any of a set of work elements which involve an observable element.

## objective rating

A type of performance rating which has an objective, as opposed to subjective, basis.

## objective symptom

Those which a surgeon or physician discovers from an examination of a patient (subjective symptoms being those which the surgeon learns from what a patient tells him/her).

## objective tree

A qualitative form of relevance tree which may be used simply to place variables in perspective.

## objects not fixed

*Transit*. Objects that are movable or moving but are not motor vehicles. Includes pedestrians, pedal cyclists, animals, or trains (e.g., spilled cargo in roadway).

## obligate anaerobes

Microorganisms that are strictly intolerant of oxygen in their environment.

**obligate parasites**

Organisms which can only survive in living cells.

**obligation**

A very broad term but generally meaning that which a person is bound to do or forbear; any duty imposed by law, promise, contract, relations of society, courtesy, kindness, etc.

**obligations under capital leases (current and noncurrent)**

Liability applicable to property obtained under capital leases.

**oblique fault**

*Seismology.* Describing motion that is a combination of movement both perpendicular and parallel to the strike of a fault. A combination of strike-slip and dip-slip (whether normal or reverse). Also referred to as an *oblique slip*.

**observation board**

A clipboard or similar tool used to support the timing device and hold any forms in gathering time and motion data.

**observation form**

Any generic or specially designed form for recording the different work elements in a particular time study.

**observe**

View to acquire data for documentation or study.

**observed rating**

That rating applied to a worker's pace by the time and motion study individual relative to that individual's judgement of what the standard pace should be.

**observer**

An individual who makes the observations in a study.

**2° observer**

See *CIE Standard Observer*.

**10° observer**

See *CIE Supplementary Standard Observer*.

**observer error**

Any error due to intra- or interobserver unreliability or differences in judgement.

**obsessive-compulsive**

Marked by a compulsion to repeatedly perform certain acts or carry out certain rituals. Obsessive-compulsive reaction is a type of

neurosis in which there is the intrusion of insistent, repetitious, and unwanted ideas or impulses to perform certain acts.

**obstacle**

*Aviation.* An existing object, object of natural growth, or terrain at a fixed geographical location or which may be expected at a fixed location within a prescribed area with reference to which vertical clearance is or must be provided during flight operation.

**obstacle free zone (OFZ)**

*Aviation.* The obstacle free zone is a three-dimensional volume of airspace which protects the transition of aircraft to and from the runway. The OFZ clearing standard precludes taxiing and parked airplanes and object penetrations, except for frangible navigation aid (NAVAID) locations that are fixed by function. Additionally, vehicles, equipment, and personnel may be authorized by air traffic control to enter the area using the provisions of Order 7110.65, Air Traffic Control, paragraph 3-5. The runway OFZ and when applicable, the inner-approach OFZ, and the inner-transitional OFZ, comprise the OFZ. See also *inner-approach obstacle free zone, inner-transitional obstacle free zone, and runway obstacle free zone*.

**obstructing justice**

The act of impeding or obstructing those who seek justice in a court, or those who have duties or powers of administering justice therein. The term also applies to obstructing the administration of justice in any way (as by hindering witnesses from appearing, assaulting an officer of the court, influencing jurors, obstructing court orders or criminal investigations).

**obstruction**

*Aviation.* Any object/obstacle exceeding the obstruction standards specified by Federal Aviation Regulations (FAR) Part 77, Subpart G.

**obstruction accident**

*Rail Operations.* An accident/incident consisting of striking: a) a bumping post or a foreign object on the track right-of-way; b) a highway vehicle at a location other than a highway-rail crossing site; derailed equipment; or c) a track motorcar or similar work equipment not equipped with Association of

American Railroad couplers, and not operating under train rules.

**obstruction light**

*Aviation.* A light or one of a group of lights, usually red or white, frequently mounted on a surface structure or natural terrain to warn pilots of the presence of an obstruction.

**obstruction to air navigation**

*Aviation.* An object of greater height than any of the heights or surfaces presented in Subpart C of Federal Aviation Regulations (FAR) Part 77.

**obvious danger**

Danger or dangerous conditions that are apparent in the exercise of ordinary observation and disclosed by the use of the eyes and other senses. Danger that is plain and apparent to a reasonably observant person.

**obvious risk**

Risk so plain that it would be instantly recognized by a person of ordinary intelligence (it does not mean unnecessary risk).

**Occam's razor**

A rule that, given two theories which explain a phenomenon, the simpler is preferred.

**occasional**

In terms of probability of hazard or mishap occurrence, a hazard or event likely to occur sometime during the life of an item.

**occasional element**

A job element which occurs at irregular intervals, less than once in a given work cycle or operation.

**occipital bone**

A curved, flat bone forming a portion of the posterior and inferior skull.

**occipital condyle**

One of a pair of bilaterally distributed condyles at the base of the skull which articulate with the atlas bone.

**occipital lobe**

A pyramid-shaped structure at the posterior portion of the cerebrum whose primary function is visual processing.

**occipital pole**

The posterior tip of the occipital lobe of the brain.

**occiput**

The posterior portion of the head.

**occluded**

Closed, shut, or blocked.

**occluded front**

A complex system that ideally forms when a cold front overtakes a warm front. When the air behind the front is colder than the air ahead of it, the front is called a *cold occlusion*. When the air behind the front is milder than the air ahead of it, it is called a *warm occlusion*.

**occluded gases**

Those gases forced into a closed space or tunnel with blowers.

**occlusion**

- (1) The act of closure or state of being closed.
- (2) The contact of the teeth of both jaws when closed or during the movements of the mandible in mastication.

**occupancy**

(1) *Life Safety.* The number of people permitted to occupy a building or region within a building. (2) *Transportation.* The number of persons, including driver and passenger(s) in a vehicle. Nationwide Personal Transportation Survey (NPTS) occupancy rates are generally calculated as person miles divided by vehicle miles.

**occupant**

Any person who is in or upon a motor vehicle in transport. Includes the driver, passengers, and persons riding on the exterior of a motor vehicle (e.g., a skateboard rider who is set in motion by holding onto a vehicle).

**occupation**

That trade, profession, or other activity which occupies one's time for compensation.

**occupational acne**

An occupational skin disorder involving acne resulting from regular exposure to acne-causing material(s) such as tar, wax, and chlorinated hydrocarbons, and which disappears on removal from those material(s). *See also occupational dermatosis.*

**occupational biomechanics**

The study of the volitional acts of the individual in loading the musculoskeletal system in the working environment.



**occupational contact dermatitis**

See *industrial dermatitis*.

**occupational dermatosis**

Any of a class of occupational skin disorders involving one or more regions of the skin, such as contact dermatitis, eczema, or rash.

See also [occupational acne](#).

**occupational disease**

(1) *General*. A disease which is a result of exposure to a hazardous material, physical agent, biological organism, or ergonomic stress in the course of one's work. (2) *Law*. A disease resulting from an exposure during employment to conditions or substances detrimental to health. Impairment of health not cause by accident but by exposure to conditions incidental to and arising out of or in the course of one's employment.

**occupational dose**

As pertains to ionizing radiation, the dose received by an individual in a restricted area or in the course of employment in which the individual's assigned duties involve exposure to radiation or to radioactive materials from licensed and unlicensed sources of radiation, whether in the possession of the licensee or other person.

**occupational ecology**

The study of the worker, the working environment, and the interaction between the two.

**occupational ergonomics**

The study and/or practice of human factors in the workplace.

**occupational exposure**

Exposure to a health hazard such as a chemical, physical, or biologic agent, or an ergonomic factor while carrying out work within the workplace.

**occupational exposure limit (OEL)**

A term indicating the concentration of an airborne contaminant or physical stress that is acceptable for exposure to it for a specified period of time.

**occupational hazard**

A risk of accident or disease which is peculiar to a particular calling or occupation.

**occupational health**

A subset of occupational medicine dealing with promoting the maintenance of worker

mental and physical well-being, including means of disease prevention.

**occupational illness**

(1) *OSHA*. Any abnormal condition or disorder, other than one resulting from an occupational injury, caused by exposure to environmental factors associated with employment. This includes any acute or chronic illnesses or diseases that may be caused by inhalation, absorption, ingestion, or direct contact. (2) *Federal Railroad Administration*. Any abnormal condition or disorder of a railroad employee, other than one resulting from injury, caused by environmental factors associated with his or her railroad employment, including, but not limited to, acute or chronic illnesses or diseases which may be caused by inhalation, absorption, ingestion, or direct contact. Also, any abnormal condition or disorder caused by environmental factors associated with a worker's employment, but not the result of an injury.

**occupational injury**

Any injury that results from a work accident or from a single instantaneous exposure in the work environment.

**occupational medicine**

A branch of medicine dedicated to the appraisal, maintenance, restoration, and improvement of the health of workers through the scientific application of preventive medicine, emergency medical care, rehabilitation, epidemiology, and environmental medicine.

**occupational neurosis**

Any neuropsychological disorder, not caused directly by an individual's occupation, but which is characterized by symptoms such as pain or fatigue involving those parts of the body normally in his/her occupation.

**occupational noise**

That noise found in the workplace.

**occupational nystagmus**

An ocular nystagmus resulting from prolonged exposure to poor lighting conditions or retinal fatigue.

**occupational paralysis**

A muscular weakness or atrophy due to nerve compression resulting from the working environment.

**occupational physiology**

See *work physiology*.

**occupational psychiatry**

A specialty within psychiatry concerned in business and industry with a) the promotion of mental health; b) diagnosis and treatment of mental illness; and c) dealing with the psychological aspects of personnel problems such as hiring, absenteeism, vocational adjustments, and retirement.

**occupational safety**

The study and/or implementation of principals intended to recognize hazards and prevent accidents in work-related situations.

**Occupational Safety and Health Act**

Federal law (1970) administered by the Occupational Safety and Health Administration (OSHA) enacted to reduce the incidence of injuries, illnesses, and deaths among working men and women in the United States which result from their employment.

**Occupational Safety and Health Administration (OSHA)**

A federal agency within the U.S. Department of Labor responsible for establishing and enforcing standards for the exposure of workers to safety hazards or harmful materials that they may encounter in the work environment, as well as other matters that may affect the safety and health of workers. The agency was established under the Occupational Safety and Health Act of 1970 along with the National Institute for Occupational Safety and Health (NIOSH) and the Occupational Safety and Health Review Commission (OSHRC).

**Occupational Safety and Health Review Commission (OSHRC)**

A commission that is independent of OSHA and has been established to review and rule on contested OSHA cases. It was created under the Occupational Safety and Health Act of 1970 along with the National Institute for Occupational Safety and Health (NIOSH) and the Occupational Safety and Health Administration (OSHA).

**occupational skin disease**

Any occupational disease involving the skin. Also referred to as *occupational skin disorder*. See also *occupational dermatosis* and *occupational acne*.

**occupational strain**

The reaction of one or more parts of the body to occupational stressors.

**occupational stress**

An internal condition resulting from any forces exerted on the individual as a result of performing some task in the work environment. Also called *work stress*.

**occupational stressor**

Any stressor present in the workplace. Also called *work stressor*.

**occupational therapist**

One who is licensed or otherwise qualified to practice occupational therapy.

**occupational therapy**

The training or use of certain occupational skills for therapeutic or rehabilitation purposes.

**occupied caboose**

A rail car being used to transport non-passenger personnel.

**occupied zone**

In the study of indoor air quality, those locations/positions where the people work or occupy space within a building.

**occurrence**

An incident.

**ocean**

Any portion of the high seas beyond the contiguous zone.

**ocean bill of lading**

A receipt for the cargo and a contract for transportation between a shipper and the ocean carrier. It may also be used as an instrument of ownership which can be bought, sold, or traded while the goods are in transit.

**ocean freight differential (OFD)**

The amount by which the cost of the ocean freight bill for the portion of commodities required to be carried on U.S. flag vessels exceeds the cost of carrying the same amount on foreign flag vessels. When applied to agricultural commodities shipped under Food for Peace, OFD is the amount paid by the Commodity Credit Corporation.

**ocean going container**

Usually made of steel, it is a large rectangular box designed for easy lift on/off by cranes.

**ocean waters**

Those waters of the open seas lying seaward of the base line from which the territorial sea is measured, as provided for in the Convention on the Territorial Sea and the Contiguous Zone.

**oceanic airspace**

Airspace over the oceans of the world, considered international airspace, where oceanic separation and procedures per the International Civil Aviation Organization are applied. Responsibility for the provisions of air traffic control service in this airspace is delegated to various countries, based generally upon geographic proximity and the availability of the required resources.

**oceanic display and planning system**

*Aviation.* An automated digital display system which provides flight data processing, conflict probe, and situation display for oceanic air traffic control.

**oceanic front**

A boundary that separates masses of water with different temperatures and densities.

**oceanic navigational error report (ONER)**

*Aviation.* A report filed when an aircraft exiting oceanic airspace has been observed by radar to be off course. ONER-reporting parameters and procedures are contained in Order 7110.82, Monitoring of Navigational Performance in Oceanic Areas.

**oceanic published route**

*Aviation.* A route established in international airspace and charted or described in flight information publications, such as Route Charts, Department of Defense (DOD) En Route Charts, Chart Supplements, NOTAMs, and Track Messages.

**oceanic transition route**

*Aviation.* Route established for the purpose of transitioning aircraft to/from an organized track system.

**OCL**

See *outer compass locator*.

**OCMI**

See *Officer in Charge of Marine Inspection*.

**OCR**

See *optical character recognition*.

**octane number**

A numerical rating used to grade the relative antiknock properties of gasoline. A high octane fuel (e.g., octane rating of 89 or more) has better antiknock properties than one with a lower number.

**octanol-water partition coefficient ( $K_{ow}$ )**

Measure of the extent of partitioning of a substance between water and octanol at equilibrium. The  $K_{ow}$  is determined by the ratio between concentration in octanol divided by the concentration in water at equilibrium (unitless).

**octave**

The interval between two sounds having a frequency ratio of two to one.

**octave band**

As applied to noise, a bandwidth that has an upper band frequency that is twice its lower band frequency. The term is used to describe the separation of noise energy into frequency bands which cover a 2 to 1 range of frequencies. The center frequencies of these bands are 31.5, 63, 125, 250, 500, 1000, 2000, 4000, 8000, and 16,000 Hz. This separation is used to analyze noise. One-third-octave band and one-tenth-octave band analyses are also used to obtain a more detailed analysis of noise.

**octave band analyzer (OBA)**

A portable instrument used for characterizing the frequency and amplitude characteristics of a sound.

**ocular**

Pertaining to the eye.

**ocular dominance**

A condition in which one eye is subconsciously relied upon more than the other. Also referred to as *eye dominance*.

**oculogram**

A surface electrical recording of activity adjacent to the eye which indicates eye movement patterns.

**oculogravic illusion**

An illusion indicating a tilting of the visual field produced when a change in vertical gravity occurs, as in a centrifuge or other linear acceleration. Also referred to as *agravic illusion*.

**oculogyral illusion**

A visual illusion involving a sense of rotation in the opposite direction produced when an abrupt change in rotational velocity occurs.

**oculomotor**

Pertaining to eye movements.

**oculomotor nerve**

The third cranial nerve, which provides motor input to the intrinsic and some extrinsic eye muscles.

**o.d.**

Outside diameter.

**OD**

See *optical density*.

**ODC**

(1) Other direct costs. (2) Ozone depleting chemical. See *ozone level depleting substances (OLDS)*.

**odontoma**

A tumor derived from tissues involved in tooth formation.

**odor**

The characteristic of a substance that makes it perceptible to the sense of smell.

**odor threshold**

The minimum concentration of a substance that can be detected and identified by a majority of the exposed population.

**odorant**

Any relatively volatile substance which is added to an odorless or offensive material to give the latter a distinctive odor for safety, attractant, or other purposes. See also *malodorant*.

**odoriferous**

Having an odor.

**odorimetry**

The study or measurement of the effects of odors on the olfactory sensory structures.

**odorize**

Add an odorant to another substance.

**OEL**

See *occupational exposure limit*.

**OFA**

See *object free area*.

**OFD**

See *ocean freight differential*.

**Office of Pollution Prevention and Toxics (OPPT)**

A section of the U.S. Environmental Protection Agency.

**off course**

*Aviation.* A term used to describe a situation where an aircraft has reported a position fix or is observed on radar at a point not on the air traffic control (ATC) approved route of flight. See also *on course* and *on-course indication*.

**off-line**

Pertaining to a terminal or other hardware not ready for access to a computer or network.

**off peak period**

See *base period*.

**off-road vehicular area**

An area for the testing of, or use by, vehicles that are designed to travel across the terrain.

**off route vector**

*Aviation.* A vector by Air Traffic Control (ATC) which takes an aircraft off a previously assigned route. Altitudes assigned by ATC during such vectors provide required obstacle clearance.

**off-site facility**

A hazardous waste treatment, storage, or disposal (TSD) area that is located at a place away from the generating site.

**off time**

That period within a given day when an individual is not scheduled to be at work.

**offense**

A felony or misdemeanor. A breach of the criminal laws; a violation of the law for which a penalty is prescribed.

**offgassing**

The release of adsorbed or occluded substances from a solid or liquid material, often by exposure to heat. Synonymous with *outgassing*.

**office**

Any location in which management, supervision, and administrative support personnel are housed and their respective functions are performed.

**office automation**

The use of implementation of computers or electromechanical devices for communica-

tions or manipulating, storing, or sending documents.

**office layout**

The arrangement of desks, filing cabinets, photocopiers, other associated equipment, and the personnel who occupy an office.

**Office of the Secretary of Transportation (OST)**

The Department of Transportation is administered by the Secretary of Transportation, who is the principal adviser to the President in all matters relating to federal transportation programs. The Secretary is assisted in the administration of the Department by a Deputy Secretary of Transportation, an Associate Deputy Secretary, the Assistant Secretaries, a General Counsel, the Inspector General, and several Directors and Chairpersons.

**Office on Environmental Policy (OEP)**

Created by President Clinton in 1993 to replace the Council on Environmental Quality (CEQ). The OEP is responsible for coordinating environmental policy within the federal government. The level of OEP participation in the major governmental policy councils (the National Security Council, the National Economic Council, and the Domestic Policy Council) clearly establishes the OEP on a much higher, visible plane than the old CEQ. See *Council on Environmental Quality*.

**Officer in Charge, Marine Inspection (OCMI)**

A person from the civilian or military branch of the Coast Guard designated as such by the Commandant and who under the supervision and direction of the Coast Guard District Commander is in charge of a designated inspection zone for the performance of duties with respect to the enforcement and administration of Title 52, Revised Statutes, acts amendatory thereof or supplemental thereto, rules and regulations thereunder, and the inspection required thereby.

**official immunity doctrine**

Doctrine of *official immunity* provides that government officials enjoy an absolute privilege from civil liability should the activity in question fall within the scope of their authority and if the action undertaken requires the exercise of discretion, and this rule of immunity is not limited to the highest executive officers of the government.

**offset parallel runway**

Runways that are staggered but have centerlines which are parallel to one another.

**offshore**

That geographic area that lies seaward of the coastline. In general, the coastline is the line of ordinary low water along with that portion of the coast that is in direct contact with the open sea or the line marking the seaward limit of inland water.

**offshore breeze**

A breeze that blows from the land out over the water. Opposite of *onshore breeze*.

**offshore control area**

*Aviation.* That portion of airspace between the U.S. 12-mile limit and the Oceanic Control Area/Flight Information Region (CTA/FIR) boundary within which air traffic control is exercised. These areas are established to permit the application of domestic procedures in the provision of air traffic control services. Offshore control area is generally synonymous with Federal Aviation Regulations, Part 71, Subpart E, "Control Areas and Control Area Extensions."

**offshore facility**

According to the Comprehensive Environmental Response, Compensation, and Liabilities Act: Any facility of any kind located in, on, or under, any of the navigable waters of the United States, and any facility of any kind which is subject to the jurisdiction of the United States and is located in, on, or under any other waters, other than a vessel or a public vessel.

**offshore supply vessel**

A cargo vessel of less than 500 gross tons that regularly transports goods, supplies, or equipment in support of exploration or production of offshore mineral or energy resources.

**OFZ**

See *obstacle free zone*.

**OGC**

Office of General Counsel.

**ogive**

A cumulative distribution curve, generally resembling an "S" shape, depending on the distribution.



**OHA**

Operational hazard analysis. *See [operating and support hazard analysis](#).*

**OH&S**

Occupational Health and Safety.

**ohm ( $\Omega$ )**

A unit of electrical resistance equal to the electrical resistance between two points of a conductor when a constant potential of 1 volt is applied between the two points and produces a current of one ampere.

**Ohm's law**

A law that is applied to the flow of electricity through a conductor. It states that the current flow in amperes is proportional to the voltage divided by the resistance in ohms.

**oil**

(1) Oil of any kind or in any form, including, but not limited to, petroleum, fuel oil, sludge, oil refuse, and oil mixed with wastes other than dredged spoil. (2) A mixture of hydrocarbons usually existing in the liquid state in natural underground pools or reservoirs. Gas is often found in association with oil.

**oil acne**

Acneform dermatitis resulting from the skin's allergic reaction to oil or oil products. Appears as red bumps, usually with pustules which progress to sores. *See also [industrial dermatitis](#).*

**oil and gas production**

The lifting of oil and gas to the surface and gathering, treating, field processing (as in the case of processing gas to extract liquid hydrocarbons), and field storage. The production function shall normally be regarded as terminating at the outlet valve on the lease or field production storage tank. If unusual physical or operational circumstances exist, it may be more appropriate to regard the production function as terminating at the first point at which oil, gas, or gas liquids are delivered to a main pipeline, a common carrier, a refinery, or a marine terminal.

**oil field body**

Heavily constructed platform-type truck body equipped with instruments for oil drilling.

**oil (filled) cutout**

As pertains to systems over 600 volts (nominal), a cutout in which all or part of the fuse

support and its fuse link or disconnecting blade are mounted in oil with complete immersion of the contacts and the fusible portion of the conducting element (fuse link). Any arc interruption, caused by severing of the fuse link or by opening of the contacts, will occur under oil.

**oil fingerprinting**

A method that identifies sources of oil and allows spills to be traced back to their source.

**oil folliculitis**

Acne-like lesions resulting from repeated skin contact with some oil products, such as insoluble cutting oils.

**oil mist**

Aerosol produced when oil is forced through a small orifice, splashed or spun into the air during operations, or vaporized and then condensed in the atmosphere.

**oil pipeline mode**

Covers crude oil, petroleum product and gas trunk lines. The pipeline industry, which transports oil and petroleum products, is an important if specialized freight mode. *See also [pipeline](#).*

**oil spill**

An accidental or intentional discharge of oil which reaches bodies of water. Can be controlled by chemical dispersion, combustion, mechanical containment, and/or adsorption.

**oil spill removal organization**

An entity that provides response resources.

**oilless compressor**

An air compressor that is not lubricated with oil. Also referred to as a breathing air compressor. Thus, it does not generate carbon monoxide or oil mist when in operation.

**ointment**

A semisolid preparation for external application to the body. Official ointments consist of medicinal substances incorporated in suitable vehicles.

**OJT**

*See [on-the-job training](#).*

**OKN**

*See [optokinetic nystagmus](#).*

**OLDS**

*See [ozone level depleting substances](#).*



**olecranon**

The proximal end of the ulna which forms the elbow prominence. More accurately called the *olecranon process*.

**olecranon fossa**

A depression in the posterior distal end of the humerus, into which the olecranon process of the ulna fits when the elbow is extended.

**olecranon height**

The vertical distance from the floor or other reference surface to the underside of the elbow. Measured with the individual standing erect, the elbow flexed 90°, and the upper arm vertical.

**OLF**

A perceived air quality term which attempts to quantify the level of odorous pollutants in OLFs.

**olfaction**

The sense of smell.

**olfactometer**

Any device for measuring the sensitivity of smell.

**olfactory**

Pertaining to the sense of smell.

**olfactory fatigue**

Condition in which the sense of smell has been diminished to the extent that an odor cannot be detected.

**olfactory nerve**

The first cranial nerve, which conveys sensory information regarding smell to the brain.

**oligotrophic lakes**

Deep clear lakes with low nutrient supplies. They contain little organic matter and have a high dissolved-oxygen level.

**OM**

See *outer marker*.

**OMB**

Office of Management and Budget.

**ombudsman**

An individual with whom an employee or agent can discuss confidential, work-related concerns and receive a quick, neutral response. The employee or agent may also report violations of law or corporate policies to this individual without fear of retribution. The ombudsman is usually trusted and re-

spected by employees, agents, and management of an organization and knows the organization's corporate culture. The ombudsman may be someone within the organization or knowledgeable individuals outside of the company.

**omega**

*Aviation.* An Area Navigation (RNAV) system designed for long-range navigation based upon ground-based electronic navigational aid signals.

**omega high**

A ridge in the middle or upper troposphere that has the shape of the Greek letter omega.

**omission**

Neglecting to perform what the law requires. The intentional or unintentional failure to act which may or may not impose criminal liability depending upon the existence of a duty to act under the circumstances.

**omphalion height**

The linear vertical distance from the floor or other reference surface to omphalion. Measured with the individual standing erect, with his/her body weight equally distributed on both feet.

**on course**

*Aviation.* (1) Used to indicate that an aircraft is established on the route centerline. (2) Used by Air Traffic Control (ATC) to advise a pilot making a radar approach that his aircraft is lined up on the final approach course. See also *off-course* and *on-course indication*.

**on-course indication**

An indication on an instrument, which provides the pilot a visual means of determining that the aircraft is located on the centerline of a given navigational track, or an indication on a radar scope that an aircraft is on a given track. See also *off course* and *on course*.

**on-demand**

Supplied as a result of a user-initiated response.

**on-flight passenger trip length**

*Aviation.* The average length of a passenger trip, calculated by dividing the number of revenue passenger-miles in scheduled service by the number of revenue passenger enplanements in scheduled service.

**online**

Pertaining to a fully connected, powered, and ready for operation terminal or other hardware access to a computer or network.

**on-off control**

Any simple control mechanism which has only two possible discrete outcomes, either full on or full off, with no intermediate state possible.

**on-off switch**

A type of on-off control which consists of a manual, remote, or automatic switch.

**on-road mile per gallon (mpg)**

A composite miles per gallon (mpg) that was adjusted to account for the difference between the test value and the fuel efficiency actually obtained on the road.

**on-scene coordinator (OSC)**

The predesignated EPA, Coast Guard, or Department of Defense Official who coordinates and directs Superfund removal actions or Clean Water Act oil (or hazardous) spill corrective actions.

**on-site facility**

A hazardous waste treatment, storage, or disposal (TSD) area that is located on the generating site.

**on-system**

Any point on or directly interconnected with a transportation, storage, or distribution system operated by a natural gas company.

**on-the-job training (OJT)**

The training of an employee by doing the tasks or job he/she will be expected to perform when training is completed, rather than by classroom or other training techniques.

**on-time performance**

The proportion of the time that a transit system adheres to its published schedule times within state tolerances.

**on-track equipment**

Railroad rolling stock used to transport freight or passengers; includes locomotives, railroad cars, maintenance equipment, and one or more locomotives coupled to one or more cars.

**oncogene**

A viral gene, found in some retroviruses, that may transform the host cell from normal to

neoplastic. More than 30 oncogenes have been identified in humans.

**oncogenesis**

The production or causation of tumors.

**oncogenic**

A substance that causes tumors, whether benign or malignant.

**oncogenicity**

The quality or property of being able to cause tumor formation.

**oncology**

The study of tumors, including the study of causes, development, characteristics, and the treatment of the tumor.

**one-hole test**

A psychomotor skill test in which an individual is required to grasp, move, and position a small cylindrical object in a hole with close tolerances.

**one-inch rule**

See *residue rule*.

**one-point discrimination**

The ability to localize a point on the body surface where pressure is being applied.

**one-tailed test**

A test of statistical significance in which a directional hypothesis is used, stating that a sample value will be exclusively either less than or greater than some value.

**one-tenth-octave band**

A band-width equal to one-tenth of an octave. See also *octave band*.

**one-third-octave band**

A band-width equal to one-third of an octave. See also *octave band*.

**ONER**

See *oceanic navigational error report*.

**onshore breeze**

A breeze that blows from the water onto the land. Opposite of an *offshore breeze*.

**onshore facility**

According to the Comprehensive Environmental Response, Compensation, and Liabilities Act: Any facility (including, but not limited to, motor vehicles and rolling stock) of any kind located in, on, or under any land or nonnavigable waters within the United States.

**onshore oil pipeline facilities**

New and existing pipe, rights-of-way and any equipment, facility, or building used in the transportation of oil located in, on, or under any land within the United States other than submerged land.

**ontogeny**

The study of the origin and development of an individual organism, from the zygote to adult.

**oocytes**

Developing egg cell.

**opacity**

The amount of light obscured by particulate pollution in the air; clear window glass has a zero opacity, a brick wall has 100 percent opacity. Opacity is used as an indicator of changes in performance of particulate matter pollution control systems.

**opalescence**

The clouded, iridescent appearance of a translucent substance or material when illuminated by more than one frequency of visible light.

**open-access transportation**

The contract carriage delivery of nonsystem supply gas on a nondiscriminatory basis for a fee generally subject to transportation tariffs which are usually on an interruptible service basis on a first-come, first-serve capacity usage.

**open-body type vehicle**

A vehicle having no occupant compartment top or an occupant compartment top that can be installed or removed by the user at his convenience.

**open burning**

(1) Uncontrolled fires in an open dump. (2) In solid waste, the combustion of waste without the control of combustion air to maintain adequate temperature for efficient combustion, containment of the combustion reaction in an enclosed device to provide sufficient residence time and mixing for complete combustion, or control of the emission of the combustion products.

**open channel**

That portion of the river above pool water.

**open-circuit SCBA**

A type of self-contained respiratory protection device which exhausts exhaled air to the atmosphere rather than recirculating it.

**open court**

Common law requires a trial in open court, meaning a court to which the public will have a right to be admitted.

**open cut**

Rail transit way below surface in an excavated cut that has not had a covering constructed over it. Transition segments to open cut or subway-tunnel/tube segments are included.

**open dump**

An uncovered site used for disposal of waste without environmental controls. *See also dump.*

**open-face filter cassette**

A cassette holding a filter that collects airborne particulate matter (usually fibers) on removal of the entire lid and not just the small inlet plug of the cassette.

**open fracture**

*See compound fracture.*

**open insurance policy**

A marine insurance policy that applies on all shipments over a period of time rather than on a single shipment.

**open loop system**

Any system in which its own output provides insignificant or no input back to the system, with all or the remainder of the input coming from another source.

**open motorboat**

Craft of open construction specifically built for operating with a motor, including boats canopied or fitted with temporary partial shelters.

**open path detectors**

Line of sight contaminant detection systems that can cover a wide area. Detection is dependent on the contaminant crossing or breaking the detector line of sight measurement beam, such as an IR or UV source. Results are typically expressed in ppm-meters.

**open riser**

The airspace between the treads of stairways without upright members (risers).

**open river**

(1) Any river having no obstructions such as dams. (2) When the stage of a pooled river running through movable dams is high

enough for traffic to clear the dams, the river is said to be "open."

**open shop**

A facility in which employment is available to both labor union members and nonunion workers.

**open stope**

Pertaining to an underground workplace which is either unsupported or supported only by occasional timbers or rock pillars.

**open system**

A system in which the handling or transfer of a material occurs in a manner such that there is contact of the material with the atmosphere.

**open timbering**

A technique for supporting the soil or rock in a shaft or tunnel in which vertical supports are located some distance apart, with overhead horizontal struts between them.

**open to public travel road**

A road must be available, except during scheduled periods, extreme weather or other emergency conditions, and open to the general public for use by four-wheel, standard passenger cars without restrictive gates, prohibitive signs, or regulation other than restrictions based on size, weight, or class of registration. Toll plazas of public toll facilities are not considered restrictive gates.

**open top**

A trailer with sides but without a permanent top; often used for heavy equipment that must be lowered into place by crane.

**open union**

A labor union without restrictive membership provisions.

**open window**

A display window which is perceptually and functionally available to the user.

**open wiring on insulators**

An exposed wiring method using cleats, knobs, tubes, and flexible tubing for the protection and support of single insulated conductors run in or on buildings, and not concealed by the building structure.

**operable unit**

Term for each of the separate activities undertaken as part of a Superfund site cleanup.

A typical operable unit would be removing drums and tanks from the surface of a site.

**operant conditioning**

A form of learning/training in which an organism provides a certain response to obtain a reward, which reinforces the occurrence of that response in the future.

**operate**

With respect to aircraft, means use, cause to use, or authorize to use aircraft, for the purpose (except as provided in 14 CFR 91.13) of air navigation including the piloting of aircraft, with or without the right of legal control (as owner, lessee, or otherwise).

**Operating and Support Hazard Analysis (O&SHA)**

A system safety analytical technique (also known as the *operational hazard analysis* or *OHA*) which focuses primarily on the hazards associated with or caused or enhanced by the human/task interface of system operations.

**operating assistance**

Financial assistance for transit operations (not capital expenditures). Such aid may originate with federal, local, or state governments.

**operating cost**

*Transit.* (1) Fixed operating cost, in reference to passenger car operating cost, refers to those expenditures that are independent of the amount of use of the car, such as insurance costs, fees for license and registration, depreciation and finance charges. (2) Variable operating cost, in reference to passenger car operating cost, expenditures which are dependent on the amount of use of the car, such as the cost of gas and oil, tires, and other maintenance.

**operating employee**

*Transit.* An employee involved with operation, maintenance, or administration of the transit system, excluding those involved in construction and capital procurement.

**operating expenses**

(1) Expenses of furnishing transportation service including the expense of maintenance and depreciation of the plant used in the service. (2) The costs of handling traffic, including both direct costs, (such as driver wages and fuel) and indirect costs (e.g., computer expenses and advertising) but excluding

interest expense. (3) Expenses incurred in the performance of air transportation, based on overall operating revenues and overall operating expenses. Does not include nonoperating income and expenses, nonrecurring items or income taxes.

**operating life**

The period of time in which prime power is applied to electrical or electronic components without maintenance or rework.

**operating practice**

Railroad employment performance and adherence to the established operating rules of a railroad company.

**operating profit or loss**

*Aviation.* Profit or loss from performance of air transportation, based on overall operating revenues and overall operating expenses. Does not include nonoperating income and expenses, nonrecurring items, or income taxes.

**operating property and equipment**

*Aviation.* Owned assets including capital leases and leaseholds which are used and useful to the air carrier's central business activity, excluding those assets held for resale, or inoperative or redundant to the air carrier's current operations. These assets include loans and units of tangible property and equipment that are used in air transportation services and services incidental thereto.

**operating ratio**

The ratio of operating expenses to operating revenues.

**operating revenue**

*Transit.* (1) The amount of money which a carrier receives from transportation operations. (2) Revenues from the performance of air transportation and related incidental services. Includes a) transport revenues from the carriage of all classes of traffic in scheduled and nonscheduled services and b) nontransport revenues consisting of federal subsidy (where applicable) and revenues for services related to air transportation.

**operating system (OS)**

A collection of computer programs that control how a computer works.

**operation**

The act of performing any planned job or task by one or more humans with or without machines/equipment in which value added to a product or information is input, processed, or output.

**operation analysis**

A systematic review and study of the purpose, procedures, time, and motions required, tools and equipment used, materials used, standards, workplace design, and working conditions for any operation.

**operation analysis chart**

A form which lists all relevant variables involved in an operation.

**operation and maintenance**

(1) Activities conducted at a site after a Superfund site action is completed to ensure that the action is effective and operating properly. (2) Actions taken after construction to assure that facilities constructed to treat wastewater will be properly operated, maintained, and managed to achieve efficiency levels and prescribed effluent limitations in an optimum manner.

**operation of a railroad**

Inclusive term used to describe all activities of a railroad related to the performance of its rail transportation business.

**operation process chart**

An abbreviated flow process chart consisting of a graphic/symbolic description providing a top-level view of the sequence for an entire operation, specifying such information as the actions and inspections involved, materials used, and pints of introduction, etc. Also called *outline process chart*.

**operational**

Ready for immediate use, or in the process of being used.

**operational acceptable level of traffic (OALT)**

An air traffic activity level associated with the designed capacity for a sector or airport. The OALT considers dynamic changes in staffing, personnel experience levels, equipment outages, operational configurations, weather, traffic complexity, aircraft performance mixtures, transitioning flights, adjacent airspace, handoff/point-out responsibilities, and other factors that may affect an air traffic opera-

tional position or system element. The OALT is normally considered to be the total number of aircraft that any air traffic functional position can accommodate for a defined period of time under a given set of circumstances.

**operational containment**

An active process for preventing an interface between entities which should be kept separate.

**operational control**

With respect to a flight, means the exercise of authority over initiating, conducting, or terminating a flight.

**operational deviation**

*Aviation.* An occurrence where applicable separation minima were maintained (as defined under *operational error*), but a) less than the applicable separation minima existed between an aircraft and protected airspace without prior approval; b) an aircraft penetrated airspace that was delegated to another position of operation or another facility without prior consideration and approval; c) an aircraft penetrated airspace that was delegated to another position of operation or another facility at an altitude or route contrary to the altitude or route requested and approved in direct coordination or as specified in a Letter of Agreement, pre-coordination, or internal procedure; d) an aircraft, vehicle, equipment, or personnel encroached upon landing area was delegated to another position of operation without prior coordination and approval. *See also operational error.*

**operational effectiveness**

A measure of satisfaction of the work accomplished or the rate at which work is being done within a given total system environment.

**operational error**

*Aviation.* An occurrence attributable to an element of the air traffic control system which a) results in less than applicable separation minima between two or more aircraft, or between an aircraft and terrain or obstacles and obstructions. Obstacles include vehicles, equipment, personnel on runways; or b) aircraft lands or departs on a runway closed to aircraft operations after receiving air traffic authorization. *See also operational deviation.*

**operational maintenance**

Any minor inspection, cleaning, servicing, adjustment, or parts replacement in equipment which can normally be performed by an operator without any specialized training or high-level technical skills.

**operational readiness**

A state or condition in which a system is not functioning due to scheduling or other reasons, but will perform its intended function when called upon to do so.

**operational road**

A usable road and intended for use roadway.

**operational runway**

A usable and intended for use runway.

**operational suitability**

A measure of the ease of use or usability of a manufactured product.

**operations**

The sum of all activities of an organization.

**operations research**

The application of scientific, statistical, and/or modeling methodology toward obtaining information for management to make objective, quantitatively based decisions using specified criteria regarding the men, machines, materials, and money under their control.

**operative temperature**

A measure of heat stress.

**operator**

(1) An individual or robot whose functions may include manipulating, supporting, and operational maintenance of a system or piece of equipment. (2) A person who controls the use of an aircraft, vessel, or vehicle. (3) A person who owns or operates a liquefied natural gas (LNG) facility. (4) A person who owns or operates onshore oil pipeline facilities. (5) The company responsible for the management and day-to-day operations of natural gas production, gathering, treating, processing, transportation, storage, and/or distribution facilities, and/or a synthetic natural gas plant.

**operator error**

*See human error.*

**operator input**

That information or data presented to/received by an operator via instructions, displays, ob-



serving equipment/system operation, or the general working environment.

**operator instruction sheet**

Any form of written instructions for providing the operator with details for performing a given task or job.

**operator output**

Any physical or verbal action taken by an operator.

**operator overload**

A condition in which an operator is expected to do more than he/she is capable of performing effectively within the given workplace, environment, or other constraints.

**operator performance**

Any measure of the work output of an operator.

**operator process chart**

An operation process chart describing the activities of a single worker without differentiation between the two hands.

**operator training**

Instruction which is intended to enable or enhance an individual's performance on a job or task.

**operator utilization**

The ratio of actual working time to total clock time.

**operator workload assessment**

The use of any relevant physiological, cognitive, or other measure to determine operator workload.

**operators**

*Maritime.* The personnel (other than security agents) scheduled to be aboard vehicles in revenue operations including vehicle operators, conductors, and ticket collectors.

**ophthalmic**

Pertaining to the eye.

**ophthalmologist**

A physician who specializes in the structure, function, and diseases of the eye.

**opiate**

Any substance having an addiction-forming or addiction-sustaining capability similar to morphine or being capable of conversion into a drug having addiction-forming or addiction-sustaining capabilities.

**opinion**

(1) *General.* A view or belief based on a judgement about what is believed to be true regarding some issue, object, or event, but without absolute certainty or knowledge. (2) *Law.* A document prepared by an attorney for his/her client, embodying his/her understanding of the law as applicable to a state of facts submitted to him/her for that purpose (e.g., an opinion of an attorney as to the marketability of a land title as determined from a review of the abstract of title and other public records.

**opinion evidence**

Evidence (testimony) of what the witness thinks, believes, or infers in regard to the facts in dispute, as distinguished from his/her personal knowledge of the facts themselves. Opinions are not generally considered with the same regard as actual facts. An exception to this rule exists with regard to *expert witnesses*. These are witnesses who, by education and experience, have become an expert in some art, science, profession, or calling and, as such, may state their opinions as to relevant and material matter, in which they profess to be expert, and may also state their reasons for the opinion. In general, expert witness opinions shall be considered with the same regard as the actual facts of the case.

**opisthocranium**

That point on the occipital bone in the midsagittal plane which marks the posterior extremity of the largest skull diameter measure.

**opponent color**

One of a set of pairs of opposing colors. See also *opponent process theory*.

**opponent colors system**

A color ordering system in which specified color pairs are considered to be at the ends of a single dimension: red vs. green, blue vs. yellow, and white vs. black.

**opponent process theory**

A theory that there are receptors in the eye for red or green for blue or yellow, and for white or black. Synonymous with *Hering's opponent process theory*.

**opportunistic infection**

An infection caused by a microorganism that does not ordinarily cause disease but can become pathogenic under some circumstances.

**opposing signals**

*Rail Operations.* Roadway signals which govern movements in opposite directions on the same track.

**opposing train**

A train, the movement of which is in a direction opposite to and toward another train on the same track.

**opposite direction aircraft**

Aircraft are operating in opposite directions when a) they are following the same track in reciprocal directions; or b) their tracks are parallel and the aircraft are flying in reciprocal directions; or c) their tracks intersect at an angle of more than 136 degrees.

**OPPT**

See *Office of Pollution Prevention and Toxics*.

**optic**

Pertaining to the eye.

**optic chiasm**

The point at which some of the neural fibers from the retina cross to the opposite side of the brain.

**optic nerve**

The third cranial nerve. It is purely sensory and is concerned with carrying visual information to the brain. The rods and cones of the retina are connected with the optic nerve which leaves the eye slightly to the nasal side of the center of the retina. The point at which the optic nerve leaves the eye is called the blind spot because there are no rods and cones in this area. The optic nerve passes through the optic foramen of the skull and into the cranial cavity. It then passes backward and undergoes a division; those nerve fibers leading from the nasal side of the retina cross to the opposite side while those from the temporal side continue to the thalamus uncrossed. After synapsing in the thalamus, the neurons convey visual impulses to the occipital lobe of the brain. Degenerative and inflammatory lesions of the optic nerve occur as a result of infections, toxic damage to the nerve, metabolic or nutritional disorders or trauma. Syphilis is the most frequent cause of infectious disorders of the optic nerve. Methanol (methyl alcohol) is highly toxic to the optic nerve and can cause total blindness. Diabetes mellitus and anemia are examples of metabolic and

nutritional disorders that can lead to damage to the optic nerve and produce serious loss of vision.

**optical axis**

An imaginary straight line extending along a horizontal plane of the eye through the midpoint of the cornea, the pupil, and the retina. The optical axis is separated from the visual axis by about 4°.

**optical brightener**

See *brightener*.

**optical cavity**

A system of using mirrors to pass a light beam through a lasing medium several times, thereby amplifying the number of photons emitted.

**optical character reader**

A device having the capability to scan a single or limited type of standardized text.

**optical character recognition (OCR)**

The study or use of photoelectric methods to identify printed or handwritten characters.

**optical density (OD)**

A measure of the total luminous transmittance of an optical material. A logarithmic expression of the attenuation provided by a filter. The logarithmic value of the ratio between the intensity of transmitted light through a clean filter and a sample.

**optical element**

Any structure within an optical device involved in shaping or directing light passage through that device.

**optical glass**

A glass which meets certain standards in being free from imperfections which would adversely affect its light transmission (bubbles, seeds, haze, etc.).

**optician**

A person who measures and grinds eyeglasses to prescription.

**optics**

The study of the generation, transmission, refraction, reflection, and detection of electromagnetic radiation between x-rays and radio waves.

**optimal**

The most desirable.

**optimal menu hierarchy**

That hierarchy of menu structures which yields either the lowest average access times or fewest number of steps in getting to a specified point or in the most common uses.

**optimistic time**

The shortest possible time in which a given operation, task, or other activity could be completed.

**optimum location principal**

The concept in designing a man-machine interface that each display and control should be placed at the best site according to one or more criteria for its intended use.

**optimum replacement interval**

See *economic life*.

**optimum sustainable population**

With respect to any population stock, the number of animals which will result in the maximum productivity of the population or the species, keeping in mind the carrying capacity of the habitat and the health of the ecosystem of which they form a constituent element.

**option approach**

See *cleared for the option*.

**optokinetic nystagmus (OKN)**

That nystagmus in a normal individual caused by a succession of objects moving across the visual field. The movement is relative. It may be achieved with the individual stationary and moving objects or a moving individual passing a number of stationary objects.

**optometer**

An instrument for determining the visual capacities of the eyes.

**optometrist**

A professional person trained to examine the eyes and prescribe eyeglasses to correct irregularities in the vision. The optometrist is not a physician and is not qualified to diagnose or treat diseases or injuries of the eye, or perform surgery.

**optometry**

The study and/or measurement of the human eye's capabilities.

**oral**

(1) Pertaining to the mouth. (2) Spoken.

**oral cavity**

See *mouth*.

**oral fissure**

That approximately elliptical opening formed by the separation of the facial lips.

**oral ingestion**

The swallowing of a material.

**oral verbal comprehension**

The ability to understand spoken language.

**oral verbal expression**

The ability to use spoken language to communicate with others.

**orbit**

(1) *Anatomy*. Referring to the eye socket. More specifically, the bony cavity containing the eyeball and its associated muscles, vessels, and nerves. The ethmoid, frontal, lacrimal, nasal, palatine, sphenoid, and zygomatic bones and the maxilla contribute to its formation. (2) *Astronautics*. To maintain a roughly elliptical position in the space around a stationary body. (3) *Science*. The path of an electron around the nucleus of an atom.

**orchard heater**

An oil heater placed in orchards that generates heat and promotes convective circulation to protect fruit trees from damaging low temperatures.

**order**

(1) A written or verbal direction or command from someone in authority. (2) Having some systematic structure or pattern (e.g., a lack of chaos). (3) A request for a specific number and type of goods or services. Also called a *purchase order*. (4) See *order of magnitude*.

**order entry**

The process of inputting the information pertaining to a purchase order into a computer for processing.

**order of magnitude**

An integer value representing an exponent of some number or expression.

**ordered metric scale**

A basic measurement scale in which items can be classified by rank using some magnitude measure, but with no specification about the absolute magnitudes or magnitudes of differences between items.

**ordinal scale**

A basic measurement scale in which items can be classified by rank, using some magnitude measure, but with no specification about the absolute magnitudes or magnitudes of differences between items.

**ordinance**

A municipal statute or regulation.

**ordinary care**

*Law.* That degree of care which persons of ordinary care and prudence are accustomed to using and employing, under the same or similar circumstances. Or, it is that degree of care which may reasonably be expected from a person in the party's situation, that is, *reasonable care*. See also *care* and *reasonable care*.

**ordinary hazard contents**

Those contents which are liable to burn with moderate rapidity and to give off a considerable volume of smoke but from which neither poisonous fumes nor explosions are to be feared in the case of fire.

**ordinary high water line**

In nature, that water elevation below which aquatic vegetation will not grow. In practice, a water surface elevation arbitrarily fixed from past experience or the establishment of navigation pools.

**ordinate**

(1) The vertical or dependent axis on a two-dimensional graph, typically labeled the y axis. (2) A particular value on a graph, represented by the perpendicular distance from the abscissa.

**ordnance**

All ammunition, demolition material, solid rocket motors, liquid propellants, pyrotechnics, and explosives.

**ordnance component**

A component such as a squib, detonator, initiator, ignitor, or linear-shaped charge, in an ordnance system.

**organ**

Organized group of tissues that perform one or more definite functions in an organism.

**organ of Corti**

An organ, lying against the basilar membrane in the cochlear duct of the ear, which contains special sensory receptors for hearing.

**organic**

Of, pertaining to, or derived from living organisms. Also, in chemistry, refers to substances containing carbon compounds.

**organic carbon partition coefficient ( $K_{oc}$ )**

Measure of the content of partitioning of a substance, at equilibrium, between organic carbon in geologic materials and water. The higher the  $K_{oc}$ , the more likely a substance is to bind to geologic materials than to remain in water.

**organic chemicals/compounds**

Animal- or plant-produced substances containing mainly carbon, hydrogen, and oxygen.

**organic matter**

Carbonaceous waste contained in plant or animal matter and originating from domestic or industrial sources.

**organic peroxide**

An organic compound containing the bivalent -O-O- structure and which may be considered a derivative of hydrogen peroxide where one or more of the hydrogen atoms have been replaced by organic radicals.

**organism**

Any living biological entity composed of one or more cells.

**organization**

That structure of people, concepts, or other entities which exist or are created to carry out or assist in one or more specific objectives.

**organization chart**

A graphic representation of the interrelationships within an organization, which may indicate lines of authority and areas of responsibility.

**organizational climate**

Those properties of the working environment which may have effects on employee productivity.

**organizational psychology**

That field of study and practice involving the structure and function of organizations.

**organized track system**

*Aviation.* A movable system of oceanic tracks that traverses the North Atlantic between Europe and North America the physical position of which is determined twice daily taking the best advantage of the winds aloft.

**organo-**

Having a carbon base.

**organogenesis**

The period in the development of a fetus during which the organs are developing.

**organometallic compound**

A chemical compound in which a metal is chemically bonded to an organic compound. Examples include organophosphate compounds, tetraethyl lead, manganese cyclopentadienyl tricarbonyl, etc.

**organophosphates**

Pesticide chemicals containing phosphorous that are used to control insects. They are usually short-lived, but some can be toxic when first applied. In sufficient quantities of exposure, there can be systemic poisoning effects.

**organotin**

As defined by the Federal Organotin Antifouling Paint Control Act of 1988: Any compound of tin used as a biocide in an antifouling paint.

**orientation**

The process of providing a new employee with some background information on the organization, its policies, and its procedures.

**orientation reflex**

See *orienting response*.

**orienting response**

A mild psychophysiological response involving a sudden shift of attention to process information, associated with some sudden event. Also referred to as *orientation reflex*. See also *startle response*.

**orifice**

An opening or hole of controlled size that can be used for the measurement of liquid or gas flow.

**orifice meter**

A device for determining flow rate. A flow meter employing, as the measure of flow, the pressure difference as measured on the upstream side of a specific type of restriction within a pipe or duct.

**origin**

(1) *Transportation*. Starting point of a trip. (2) *Transit*. The country in which the cargo was loaded and/or the transit originated. (3) *Anatomy*. The point or bone surface location

from which skeletal muscle originates (opposite of *insertion*). (4) *Mathematics*. The null reference point for a coordinate system, at which all axes meet and are usually assigned values of zero.

**original document rule**

The best evidence of the contents of a document is the original of that document. The party bearing the burden of proving the contents of a document is required to introduce the original unless he/she is excused from its production because of its non-availability and in this instance, secondary evidence is admissible.

**originality**

The ability to produce new, unusual, or clever thoughts on a given topic.

**originated carload**

An originated carload is one which is loaded and begins its journey on a particular railroad.

**originating statute**

See *statutory mandate*.

**ORM**

See *other regulated material*.

**ORNL**

Oak Ridge National Laboratory.

**orographic uplift**

The lifting of air over a topographic barrier. Clouds that form in this uplifting process are called *orographic clouds*.

**oropharynx**

The middle region of the pharynx, from the level of the soft palate to the level of the hyoid bone, and from the posterior pharyngeal wall to the fauces.

**Orsat apparatus**

A device for measuring the percentage of carbon dioxide, oxygen, and carbon monoxide in flue gas.

**orthoaxis**

The true anatomical axis of rotation for a limb.

**orthocenter**

The instantaneous anatomical center of rotation for a joint.

**orthogonal**

(1) Being perpendicular or at right angles. (2) Completely independent or separable.

**orthograde**

Standing or walking in an upright position.

**orthonormal**

Pertaining to orthogonal vectors or functions whose lengths or products are 1, respectively.

**orthopedics**

That medical field concerned with the treatment or correction of deformities or diseases of the structures involved in human movement. Also spelled *orthopaedics*.

**orthoptics**

The study of visual responses and reactions, and many corrections required to effect normal binocular vision.

**orthosis**

Any device for aiding the strength and/or dexterity of a weakened, damaged, or atrophied body part or for preventing bone or other deformity.

**orthostatic**

Pertaining to an upright stance.

**orthostatic hypotension**

A fall in blood pressure on standing. *See also orthostatic intolerance.*

**orthostatic intolerance**

The inability of the cardiovascular system to supply adequate blood pressure and flow to the brain on standing. *See also orthostatic hypotension.*

**orthotic**

*See orthosis.*

**O&SHA**

*See operating and support hazard analysis.*

**OS**

*See operating system.*

**OSA color scale**

A color ordering system which attempts to relate the distance between points on a color diagram to the perceptual difference between any two colors, and is based on specifications of lightness (L), yellowness (j), and greenness (g).

**O-scale**

A system for estimating the degree of obesity using transformed, geometrically adjusted skinfold values with body weight.

**os calcis**

*See calcaneus.*

**os cuboideum**

*See cuboid bone.*

**osazone**

Any one of a series of compounds obtained by heating sugars with phenylhydrazine and acetic acid.

**OSC**

*See on-scene coordinator.*

**oscillate**

To execute repeated reversals in velocity, generally between a range of values.

**oscillating conveyor**

A trough-like mechanism which moves loose materials along by vibrating the bed.

**oscillation**

(1) *General.* A backward and forward motion, like a pendulum. Also, vibration, fluctuation, or variation. (2) *Acoustics.* Variation, usually with time, of the magnitude of a quantity with respect to a specified reference when the magnitude is alternately greater and smaller than the reference. Back-and-forth variation of a steady uninterrupted sound.

**oscillator**

Any device which produces oscillations.

**oscillogram**

A printed, hardcopy record of electrical waveforms, typically biological in origin.

**oscillograph**

An instrument used for obtaining an oscillogram.

**oscilloscope**

An instrument that visually displays the shape of electrical waves on a fluorescent screen.

**OSHA**

*See Occupational Safety and Health Administration.*

**OSHA Form 101**

A form for recording information on occupational illnesses and injuries to supplement that which is recorded on the OSHA Form 200.

**OSHA Form 200**

A form for recording occupational injuries, illnesses, and deaths for submission to the U.S. Department of Labor.

**OSHA General Industry Standard (GIS)**

Part 1910 of Chapter XVII of Title 29 of the Code of Federal Regulations dealing with



OSHA occupational safety and health standards.

**OSHRC**

See *Occupational Safety and Health Review Commission*.

**osmium**

A chemical element, atomic number 76, atomic weight 190.2, symbol Os.

**osmolality**

The concentration of the solute in a solution per unit of solvent.

**osmophore**

The group of atoms in a molecule of a compound that is responsible for its odor.

**osmosis**

Diffusion that proceeds through a semi-permeable membrane separating two miscible solutions and that tends to equalize concentrations.

**osseous labyrinth**

An interconnected series of cavities within the temporal bone which comprise the inner ear, including the vestibule, semicircular canals, and cochlea.

**ossicle**

A small bone. The auditory ossicles are the malleus, incus, and stapes of the middle ear.

**OST**

See *Office of the Secretary of Transportation*.

**osteitis**

A general term for inflammation of bone tissue. It is used to describe a number of conditions. For example, advanced cases of syphilis can lead to syphilitic osteitis.

**osteo-**

A prefix denoting a relationship to a bone or to the bones.

**osteoarthritis**

Hypertrophic degeneration of joints that is part of the normal aging process. It is most likely to strike the joints that receive the most use or stress over the years. These include the knees, the joints of the big toes, and those of the lower part of the spine. Another common form of osteoarthritis affects the distal joints of the fingers.

**osteochondritis**

An inflammation of both bone and cartilaginous tissues.

**osteochondritis dissecans**

A joint condition in which a fragment of articular cartilage and the underlying bone have partially or completely separated.

**osteodystrophy**

A reduced capacity to support the body weight due to osteoporosis.

**osteoma**

A tumor, benign or malignant, composed of bone.

**osteomyelitis**

Inflammation of bone caused by a pyrogenic microorganism. It may result in bone destruction, in stiffening of joints if the infection spreads to the joints and, in extreme cases occurring before the end of the growth period, in the shortening of a leg if the growth center is destroyed. Acute osteomyelitis is caused by bacteria that enter the body through a wound, spread from an infection near the bone, or come from a skin or throat infection. The infection usually affects the long bones of the arms and legs and causes acute pain and fever. It most often occurs in children and adolescents, particularly boys. The onset may be quite sudden, with chills, high fever, and severe pain. Signs and symptoms include a marked increase in leukocytes, tenderness, swelling, and redness of the skin over the bone involved and bacteremia. About 10 to 14 days after the onset of symptoms, x-rays show signs of the bone infection.

**osteonecrosis**

The death of regions of bone tissue due to the loss of blood vessels which supply the bone, usually at joints. Synonymous with *avascular necrosis*.

**osteopath**

One who treats diseases by manipulation of the bones. Also, a practitioner of osteopathy.

**osteopathy**

A system of complete medical practice based on the maintenance of proper relationships among various parts of the body. Osteopathic physicians, licensed in all 50 states, employ manipulative therapy, drugs, surgery, x-ray, and all other accepted therapeutic methods in

the treatment of disease and injury. Osteopathic medicine focuses special attention on the biological mechanisms by which the musculoskeletal system, through the nervous and circulatory systems, interacts with all body organs and systems in both health and disease. Doctors of Osteopathy (DOS) diagnose and treat disorders of the musculoskeletal system through palpation and appropriately applied manipulative procedures.

**osteoporosis**

A bone disorder characterized by an overall loss of mineral mass through resorption, resulting in larger marrow spaces, decreased cortical bone, and decreased structural strength. Associated with an increased risk of fractures. The principal causes are lack of physical activity, lack of estrogens or androgens, and possibly a chronic low intake of calcium. There is almost always some degree of osteoporosis in senility. The condition may accompany endocrine disorders, bone marrow disorders, and nutritional disturbances. Symptoms include pathologic fractures and collapse of the vertebrae without compression of the spinal cord. The latter is often discovered "accidentally" on x-ray examination made for some other reason.

**osteosclerosis**

The hardening or abnormal density of bones.

**Ostwald color system**

A color ordering system which specifies colors by hue, a white-to-black dimension, and a depth-vididness dimension.

**other assets**

Debit balances in general clearing accounts including prepayments chargeable against operations over a period of years, capitalized expenditures of an organization or developmental character, long-term prepayments, and property acquisition adjustments.

**other deferred credits**

Credit balances in general clearing accounts including credits for which the final disposition cannot be effected until additional information has been received.

**other freeways and expressways**

All urban principal arterials with limited control of access not on the Interstate system.

**other interest expense**

Interest expense other than that on long-term debt and capital leases. This includes interest expense on short-term debt, interest capitalized, and amortization of premium on all classes of debt.

**other nonoperating income & expenses, net**

*Transportation.* Income from all investor-controlled companies and nontransport ventures, equipment, and investments in securities of others, interest income, gains or losses resulting from nonroutine abnormal changes in the rates of foreign exchange, and other nonoperating items except capital gains or losses and interest expense.

**other regulated material (ORM)**

Any material that does not meet the definition of a hazardous material, other than combustible liquid in packaging having a capacity of 110 gallons or less, and is specifically listed in the Table of Hazardous Materials as an ORM. A material not listed in the Table may also be considered an ORM if it meets certain characteristics specified in 49 CFR 173.

**other single-unit truck**

A motor vehicle consisting primarily of a single motorized device with more than two axles or more than four tires.

**other tanker vessel**

A crude oil-carrying ship of between 25,000 and 160,000 deadweight tons.

**other-than-serious violation (OTS)**

The classification of other-than-serious or "non-serious" violation applies when the potential consequences of the violation might be a minor illness or injury (i.e., an illness or injury which does not rise to the level of serious physical harm).

**other transport-related revenue**

Those revenues from services such as in-flight sales, rentals and sales of services, supplies and parts.

**other truck**

All trucks other than pickups, (i.e., dump trucks, trailer trucks, etc.).

**other vehicle**

Consists of the following types of vehicles: a) large limousines (more than four side doors or stretched chassis), b) three-wheel automobiles or automobile derivatives, c) van-based

motor homes, d) light-truck-based motor homes (chassis mounted), e) large-truck-based motor homes, f) ATVs (all terrain vehicle, including dune/swamp buggy) and ATC (all terrain cycle), g) snowmobiles, h) farm equipment other than trucks, i) construction equipment other than trucks (includes graders), j) other type vehicles (includes go-cart, fork lift, city street sweeper).

**otitis externa**

Any inflammation of the external auditory canal.

**otitis interna**

An inflammation of the inner ear.

**otitis media**

An inflammation of the middle ear.

**otobasion**

The region of attachment of the anterior portion of the auricle to the skin of the face. *See also otobasion inferior and otobasion superior.*

**otobasion inferior**

The lowest point of attachment of the auricle to the skin of the face.

**otobasion superior**

The highest point of attachment of the auricle to the skin of the face.

**otolith**

A calcium-based particle within the utricle and saccule of the inner ear used for sensing head position.

**otologic**

Pertaining to otology.

**otologist**

A physician who specializes in surgery and diseases of the ear.

**otology**

Branch of medicine which deals with the ear, its anatomy, physiology, and pathology.

**otomycosis**

A fungal infection of the outer ear. The infection thrives in warm, moist climates and is encouraged by poor local hygiene and swimming. Symptoms include itching, which may be intense, pain and a stinging sensation in the external acoustic meatus.

**otosclerosis**

The formation of bony tissue in the cavities of the inner ear, often causing the auditory ossi-

cles to become fixed and less able to pass on vibrations when sound enters the ear. The ossicle chiefly involved in the condition is the stirrup or stapes, which becomes fixed to the oval window. The cause of otosclerosis is not clearly understood. It may be hereditary, or perhaps related to vitamin deficiency, or to otitis media. An early symptom is ringing in the ears, but the most noticeable symptom is progressive loss of hearing.

**otoscope**

An instrument for examination or auscultation (examine by listening) of the ear.



*Otoscope*

**ototoxic**

Having a deleterious effect upon the eighth cranial nerve (vestibulocochlear) or on the organs of hearing and balance.

**OTS**

*See other-than-serious violation.*

**ounce**

A unit of mass in the English system of measurement.

**ouncedal**

A unit of force equal to that which imparts an acceleration of 1 ft/sec<sup>2</sup> to a 1 ounce mass.

**out**

*Aviation. Communication Protocol:* Means the conversation is ended and no response is expected.

**out draft**

*Maritime Navigation.* Current moving across the lock entrance toward the river or toward the dam.

**out of phase**

Pertaining to waveforms having the same frequency but which are not at the same point in their respective cycles at the same time.

**out of shape**

*Maritime Navigation.* Term used when a tow is not in the proper position to negotiate the channel or to shove into, or come out of, a lock (conversely, "in shape").

**out riggers**

Device used for increasing width of trailers.

**out wide, just below**

*Maritime Navigation.* Channel report term meaning after passing the mark, swing out wide away from the bank.

**outage**

(1) The period during which a generating unit, transmission line, or other facility is out of service. (2) The loss of a facility/service for one minute or more. (3) The amount by which a packaging falls short of being liquid full, usually expressed in percent by volume. Also referred to as *ullage*.

**outboard**

An engine not permanently affixed to the structure of the craft, regardless of the method or location used to mount the engine (e.g., motor wells, "kicker pits", motor pockets, etc).

**outboard designated seating position**

A designated seating position where a longitudinal vertical plane tangent to the outboard side of the seat cushion is less than 12 inches from the innermost point on the inside surface of the vehicle at a height between the design H-point and the shoulder reference point and longitudinally between the front and rear edges of the seat cushion.

**outcome**

That projected or actual result due to the implementation of certain decisions.

**outdoor air (OA)**

Fresh air from the outdoors mixed with return air to dilute contaminants in the supply air. Outdoor air is usually obtained from outside the building, but exceptions exist (e.g., from an acceptable hallway) in some cases. *See also return air and supply air.*

**outdoor air pollution**

That pollution found outside living, working, or other structures, generally consisting of airborne hazardous or offensive substances such as dust, ozone, hydrocarbons, and smoke.

**outer area**

*Aviation.* Nonregulatory airspace surrounding designated Class C airspace airports wherein Air Traffic Control (ATC) provides radar vectoring and sequencing on a full-time basis for all Instrument Flight Rules (IFR) and participating Visual Flight Rules (VFR) aircraft. The service provided in the outer area is called Class C service which includes IFR/IFR-standard Instrument Flight Rules separation; IFR/VFR-traffic advisories and conflict resolution; and VFR/VFR-traffic advisories and, as appropriate, safety alerts. The normal radius will be 20 nautical miles with some variations based on site-specific requirements. The outer area extends outward from the primary Class C airspace airport and extends from the lower limits of radar/radio coverage up to the ceiling of the approach control's delegated airspace excluding the Class C charted area and other airspace as appropriate.

**outer compass locator (OCL)**

*Aviation.* A compass locator installed at the site of the outer marker of an instrument landing system.

**outer continental shelf**

The offshore limits of federal domain.

**outer ear**

*See external ear.*

**outer fix**

*Aviation.* A general term used within Air Traffic Control (ATC) to describe fixes in the terminal area, other than the final approach fix. Aircraft are normally cleared to these fixes by an Air Route Traffic Control Center or an Approach Control Facility. Aircraft are normally cleared from these fixes to the final approach fix or final approach course.

**outer fix time**

*Aviation.* A calculated time to depart the outer fix to cross the vertex at the actual calculated landing time. The time reflects descent speed adjustments and any applicable delay time that must be absorbed prior to crossing the meter fix.

**outer lock wall**

The wall of the lock on the river or channel side away from the shore.

**outer marker (OM)**

*Aviation Navigation.* A marker beacon at or near the glideslope intercept altitude of an Instrument Landing System (ILS) approach. It is keyed to transmit two dashes per second on a 400 Hz tone, which is received aurally and visually by compatible airborne equipment. The OM is normally located four to seven miles from the runway threshold on the extended centerline of the runway. *See also compass locator, glideslope, instrument landing system, localizer, and middle marker.*

**outer packaging**

The outermost enclosure of composite or combination packaging together with any absorbent materials, cushioning, and any other components necessary to contain and protect inner receptacles or inner packagings.

**outer shell**

The exterior layer of material on the fire coat and protective trousers which forms the outermost barrier between the fire fighter and the environment. It is attached to the vapor barrier and liner and is usually constructed with a storm flap, suitable closures, and pockets.

**outerwear**

Any type of clothing typically worn outside or over other clothing.

**outfall**

The place where effluent is discharged into receiving waters.

**outgassing**

*See offgassing.*

**outlet**

A point on the wiring system at which current is taken to supply utilization equipment.

**outlier**

A value within a dataset which is located at such an extreme point from the remainder of the distribution that its presence cannot be reasonably attributed to any known cause. Also referred to as *wild value*.

**outline lighting**

An arrangement of incandescent lamps or electric discharge tubing to outline or call attention to certain features such as the shape of a building or the decoration of a window.

**outpatient**

An individual who enters a hospital or clinic

for treatment and/or diagnosis, but who does not occupy a bed overnight.

**output**

(1) The amount of power or energy produced by a generating unit, station, or system. (2) Any data, information, display, or other results provided by a computer system.

**output device**

Any means through which output from a computer is provided.

**output standard**

That number of products or services which is expected within a specified period of time from a worker or unit using a specified method.

**outrigger scaffold**

A scaffold supported by outriggers or thrust-outs projecting beyond the wall or face of the building or structure, the inboard ends of which are secured inside of such a building or structure.

**outside air**

That air drawn in from a source external to a ventilation system.

**outside-in display**

A display using the outside world as a frame of reference, such that the display reflects the way an external operator would see an object react.

**outside of a bend**

The side of the river channel with the largest projected circumference.

**outside work**

(1) That work done outside of some building or structure where the worker is exposed to the atmospheric elements. (2) *See external work.*

**outsource**

To hire an outside firm to perform some specific function, especially with respect to performing computerized information services.

**oval window**

That junction between the middle ear and the inner ear at which the base of the stapes and its ligaments join the temporal bone, and through which sound is conducted to the cochlea. *See also round window.*

**ovary**

That female organ which releases certain hormones and the eggs for reproduction.

**oven, wall mounted**

An oven for cooking purposes designed for mounting in or on a wall or other surface and consisting of one or more heating elements, internal wiring, and built-in or separately mountable controls. *See also cooking unit, counter mounted.*

**over**

*Aviation.* Communication Protocol: Means my transmission is ended; I expect a response.

**over-the-road bus**

A bus characterized by an elevated passenger deck located over a baggage compartment.

**over-the-road trip**

An intercity movement by commercial motor vehicle.

**over-the-top**

Above the layer of clouds or other obscuring phenomena forming the ceiling.

**overachiever**

(1) An individual whose performance is better than would be expected from known characteristics or previous performance. (2) An individual who feels a need to exceed and does more work than is required.

**overall available ton mile**

The aircraft miles flown on each inter-airport hop multiplied by the capacity available (in tons) for that hop for revenue traffic use.

**overall flight stage length**

The average distance covered per aircraft hop in revenue services, from takeoff to landing. Derived by dividing the total aircraft miles flown in revenue service by the number of aircraft revenue departures performed.

**overall noise**

The overall sound pressure level in decibels, as determined by a microphone and meter without the weighting of the frequency components of the noise to attenuate part of the sound spectrum. *Also referred to as OA sound pressure level.*

**overall revenue ton mile**

The aircraft miles flown on each inter-airport hop multiplied by the tons of revenue traffic

(passenger and nonpassenger) carried on that hop.

**overall sound pressure level**

The summation of all acoustic energy in the frequency bands from 22.4 Hz to 11.2 kHz.

**overall study**

The measurement and recording of the cycle time to verify a time study standard.

**overall ton miles (load factor, available capacity, etc.)**

The total of passenger plus nonpassenger traffic, i.e., the sum of passenger and baggage freight, express, U.S. mail, and foreign mail.

**overall vehicle width**

The nominal design dimension of the widest part of the vehicle, exclusive of signal lamps, marker lamps, outside rearview mirrors, flexible fender extensions, and mud flaps, determined with doors and windows closed and the wheels in the straight-ahead position.

**overarching weight**

That force from the overhead ground or rock in a tunnel or shaft.

**overbite**

Extension of incisal ridges of the upper anterior teeth below the incisal ridges of the anterior teeth in the lower jaw when the jaws are closed normally.

**overbreadth doctrine**

This doctrine, which derives from the First Amendment, serves to invalidate legislation so sweeping that, along with its allowable proscriptions, it also restricts the constitutionally protected rights of free speech, press, or assembly.

**overburden**

The rock and soil cleared away before mining.

**overcast**

Pertaining to a sky with complete cloud cover, and no visible disk of the sun.

**overcurrent**

Any current in excess of the rated current of equipment or the ampacity of a conductor. It may result from overload, short circuit, or ground fault. A current in excess of rating may be accommodated by certain equipment and conductors for a given set of conditions. Hence, the rules for overcurrent protection are specific for particular situations.



**overexposure**

With regard to occupational exposure, it is an exposure to an airborne contaminant, or physical stress at a level that is above an established limit, such as an OSHA PEL, an ACGIH TLV, or other recognized exposure limit.

**overfalls**

Short breaking waves occurring when a current passes over a shoal or other submarine obstruction or meets a contrary current or wind.

**overfire air**

Air forced into the top of an incinerator or boiler to fan the flames.

**overhaul**

The process of disassembling, inspecting, re-finishing, replacing part(s), adjusting, reassembling, and/or testing as required to return hardware or equipment to service.

**overhead**

- (1) Pertaining to the region above the head.
- (2) That portion of the cost of doing business which cannot be allocated to a particular operation, project, system, or product.

**overhead maneuver**

*Aviation.* A series of predetermined maneuvers prescribed for aircraft (often in formation) for entry into the visual flight rules (VFR) traffic pattern and to proceed to a landing. An overhead maneuver is not an instrument flight rules (IFR) approach procedure. An aircraft executing an overhead maneuver is considered VFR and the IFR flight plan is cancelled when the aircraft reaches the "initial point" on the initial approach portion of the maneuver. The pattern usually specifies the following: a) the radio contact required of the pilot. b) the speed to be maintained. c) an initial approach 3 to 6 miles in length. d) an elliptical pattern consisting of two 180 degree turns. e) a break point at which the first 180 degree turn is started. f) the direction of turns. g) altitude (at least 600 feet above the conventional pattern). h) a "Roll-out" on final approach not less than 1/4 mile from the landing threshold and not less than 300 feet above the ground.

**overhead work**

That work performed with the arms raised above the head and/or shoulders.

**overhydration**

A state of excess fluids in the body.

**overland flow**

A land application technique that cleanses wastewater by allowing it to flow over a sloped surface. As the water flows over the surface, the contaminants are removed and the water is collected at the bottom of the slope for reuse.

**overlap**

To partially obscure another display entity.

**overlay**

To completely or partially obscure one display entity by another.

**overlearning**

That learning or practice beyond the point of a single correct response.

**overload**

Operation of equipment in excess of normal, full-load rating, or of a conductor in excess of rated ampacity which, when it persists for a sufficient length of time, would cause damage or dangerous overheating. A fault, such as a short circuit or ground fault, is not an overload. *See also* **overcurrent**.

**overload principle**

(1) The concept that a system will fail to function properly or not function at all when saturated by the task requirements. (2) A rule that the strength, endurance, and hypertrophy of a muscle will increase only as a result of the muscle working against loads greater than those normally encountered for a period of time.

**overloading**

*Maritime Navigation.* Excessive loading of the vessel causing instability, limited maneuverability, dangerously reduced freeboard, etc.

**overlook access**

A road that provides access to a pull-off area, having definite entrance and exit points. *See also* **public use Class II road**.

**overlying center**

The Air Route Traffic Control Center (ARTCC) facility that is responsible for arrival/departure operations at a specific terminal.

**overpack**

*Shipping.* An enclosure that is used by a single consignor to provide protection or con-

venience in handling of a package or to consolidate two or more packages. Overpack does not include a freight container.

**override**

To take over the operation of a control system which has been controlling one or more systems by a human or another control system.

**overrun/stopway**

An area beyond the takeoff runway able to support an airplane during an aborted takeoff.

**overseas**

Transit to or from foreign ports beyond the Coast of Canada and the United States.

**overseas air commerce**

The carriage by aircraft of persons or property for compensation or hire, or the carriage of mail by aircraft, or the operation or navigation of aircraft in the conduct or furtherance of a business or vocation, in commerce between a place in any state of the United States, or the District of Columbia and any place in a territory or possession of the United States; or between a place in a territory or possession of the United States, and a place in any other territory or possession of the United States.

**overseas air transportation**

The carriage by aircraft of persons or property as a common carrier for compensation or hire, or the carriage of mail by aircraft, in commerce: a) between a place in a state or the District of Columbia and a place in a possession of the United States; or b) between a place in a possession of the United States and a place in another possession of the United States whether that commerce moves wholly by aircraft or partly by aircraft and partly by other forms of transportation.

**overshoot**

A motor response which goes beyond the intended target point or value.

**overstrike**

A computer operating mode in which the keystrokes entered by the user replace those on the display, with the originals being lost.

**overt behavior**

Any objective behavioral act.

**overt lifting task**

The lifting and/or manipulation of significant loads.

**overtime**

Those hours worked by an hourly worker beyond the standard workday or workweek for that worker.

**overtone**

A constituent of a complex tone whose frequency is an integral (greater than unity) multiple of the fundamental frequency.

**overturn**

The period of mixing (turnover), by top to bottom circulation, of previously stratified water masses. This phenomenon may occur in spring and/or fall, or after storms. It results in a uniformity of chemical and physical properties of the water at all depths.

**overuse syndrome**

*See repetitive motion injury.*

**overutilization hypoxia**

A tissue oxygen deficiency due to a greater demand for oxygen than can be supplied. Usually encountered during prolonged heavy muscular activity.

**own source revenue**

All amounts of money received by a government from external sources, net of refunds and other correcting transactions, other than from the issuance of debt, liquidation of investments, and as agency and private trust transactions. The federal government's revenues are generally referred to as receipts.

**owner/operator**

Independent trucker who drives the vehicle for him/herself or on lease to a company.

**owning agency**

A federal agency having accountability for government-owned motor vehicles. This term applies when a federal agency has authority to take possession of, assign, or reassign the vehicle regardless of which agency is using the vehicle.

**oxalic acid**

A poisonous, crystalline, dibasic acid found in various fruits and vegetables, and formed in the metabolism of ascorbic acid in the body. It is highly toxic and, if ingested, should be neutralized by the administration of lime water (calcium hydroxide solution) or another convenient source of calcium, which reacts with the acid to form insoluble calcium oxalate.

**oxbow lake**

A lake resulting from the cutting off of sharp river bends during realignment of a river channel.

**oxidant**

A substance that contains oxygen and that may react chemically in air to produce a new substance.

**oxidation**

In chemistry, the combination of oxygen with a substance (or the removal of hydrogen from a substance) which causes a loss of electrons from the atom of a substance.

**oxidation pond**

A manmade lake or body of water in which waste is consumed by bacteria. It is used most frequently with other waste treatment processes. An oxidation pond is basically the same as a sewage lagoon.

**oxides of nitrogen (NO<sub>x</sub>)**

The sum of the concentrations of nitric oxide and nitrogen dioxide present in the ambient air as determined employing an acceptable gas sampling procedure.

**oxidizer**

A gas, liquid, or solid material that may accelerate the combustion of other materials, primarily organic.

**oxidizing agent**

Any substance which contains an excess of oxygen or certain other substances which are readily available for chemical combination with other substances and release energy on doing so. *See also oxidizer and oxidizing material.*

**oxidizing material**

Chemicals or chemical combinations that spontaneously evolve oxygen at room temperature or with slight heating. *See also oxidizer and oxidizing agent.*

**oximeter**

An instrument for measuring the oxygen content in a given environment.

**oximetry**

The measurement of the amount of oxygen in a given environment.

**oxygen (O<sub>2</sub>)**

A chemical element, atomic number 8, atomic weight 15.999, symbol O. A tasteless, odor-

less gas at normal temperature and pressure which serves as the primary oxidizing agent for biological systems. It makes up approximately 20% of the earth's atmosphere. In combination with hydrogen, it forms water. By weight, 90 percent of water is oxygen. It is the most abundant of all elements of nature. Large quantities are distributed throughout the solid matter of the earth, because the gas combines readily with many other elements. With carbon and hydrogen, oxygen forms the chemical basis of much organic material.

**oxygen capacity**

The maximal amount of oxygen which can be absorbed by a specified amount of blood when equilibrated with an excessive amount of oxygen.

**oxygen consumption rate (V<sub>O<sub>2</sub></sub>)**

The amount of oxygen used by the body within a specified unit time.

**oxygen debt**

That additional amount of oxygen above normal resting requirements which is required during the recovery phase following strenuous exercise to reconvert the anaerobic byproducts of metabolism generated during overutilization hypoxia.

**oxygen deficiency**

A condition in which the concentration of oxygen by volume is insufficient to maintain normal respiration. It exists in atmospheres in which the percentage of oxygen by volume, which is 21% under normal conditions, drops below 19.5%.

**oxygen deficiency - immediately dangerous to life and health**

An atmosphere which causes the partial pressure of oxygen in the inspired air to be equal to or less than 100 mm of mercury in the upper portion of the lungs. The partial pressure of oxygen in the atmosphere is typically 158 mm of mercury.

**oxygen deficient atmosphere**

An atmosphere which contains less than the approximately 20 – 21% of oxygen found in normal air; or, an atmosphere containing less than 19.5% oxygen by volume. It is that concentration of oxygen by volume below which atmosphere-supplying respiratory protection must be provided.

**oxygen-enriched atmosphere**

An atmosphere containing more than 23.5% oxygen by volume.

**oxygen mask**

Any mask covering at least the nose and mouth and used for oxygen inhalation.

**oxygen saturation**

The value of the ratio of actual oxygen content of hemoglobin to its oxygen capacity.

**oxygen tolerance curve**

A graphic representation of the amount of time an average individual can be expected to breathe pure oxygen at different water depths or at higher barometric pressures without harmful effects.

**oxygenate**

A substance which, when added to gasoline, increases the amount of oxygen in that gasoline blend. Includes fuel ethanol, methanol, and methyl tertiary butyl ether (MTBE).

**oxygenated motor gasoline**

Motor gasoline, formulated for use in motor vehicles, that has an oxygen content of 1.8 percent or higher by weight. *See also fuel, gasohol, gasoline, motor gasoline, and kerosene.*

**oxygenated solvent**

An organic solvent containing oxygen as part of the molecular structure. Alcohols and ketones are oxygenated compounds often used as paint solvents.

**oxygenation**

To saturate with oxygen.

**oxygenator**

An apparatus used to introduce oxygen into the blood during circulation outside the body, as during open-heart surgery.

**oxyhemoglobin (HbO<sub>2</sub>)**

Hemoglobin that has absorbed oxygen, (i.e., has been oxygenated).

**oz**

Ounce.

**ozonator**

A device that adds ozone to water.

**ozone (O<sub>3</sub>)**

An unstable allotropic form of oxygen existing in two different layers of the Earth's atmosphere, the stratosphere and the tropo-

sphere. In the stratosphere (the atmospheric layer beginning 7-10 miles above the Earth's surface), ozone is found naturally and provides a protective layer shielding the Earth from the harmful effects of the sun's ultraviolet radiation. In the troposphere (the layer extending from the Earth's surface up to 7-10 miles), ozone is a chemical oxidant and a major component of photochemical smog. Ozone can seriously affect the human respiratory system and is one of the most prevalent and widespread of all the criteria pollutants identified in the Clean Air Act. Ozone in the troposphere is produced through complex chemical reactions of nitrogen oxides, which are among the primary pollutants emitted by combustion sources; hydrocarbons, released into the atmosphere through the combustion, handling and processing of petroleum products; and sunlight.

**ozone-depleted potential**

A factor established by the EPA Administrator to reflect the ozone-depletion potential of a substance, on a mass per kilogram basis, as compared to chlorofluorocarbon-11 (CFC-11). Such factor shall be based upon the substance's atmospheric lifetime, the molecular weight of bromine and chlorine, and the substance's ability to be photolytically disassociated, and upon other factors determined to be an accurate measure of relative ozone-depletion potential.

**ozone-depleting chemicals (ODCs)**

*See ozone level depleting substances (OLDS).*

**ozone depletion**

Destruction of the stratospheric ozone layer which shields the Earth from the sun's ultraviolet radiation which is harmful to biological life.

**ozone layer**

Segments of the stratosphere (7 to 10 miles above the earth's surface) in which ozone is found in abundance and provides a natural protection against the sun's ultraviolet radiation.

**ozone level depleting substances (OLDS)**

Substances which lead to the destruction of ozone by the breaking down of certain chlorine and bromine containing compounds, such as CFCs (chlorofluorocarbons) or halons,

which break down when they reach the stratosphere and catalitically destroy ozone molecules.

# P

## **P & Ds**

Pick ups and deliveries of freight.

## **P&ID**

Piping and instrumentation drawing.

## **p chart**

A graph or display, tracking over time, the fraction of non-conforming units within samples.

## **P-300**

An apparently endogenous brain event-related potential which occurs about 300 msec following an unexpected stimulus. However, a large onset time variance can be expected.

## **Pa**

See *Pascal*.

## **pace**

To regulate the rate at which some task or function is performed.

## **pace rating**

See *performance rating*.

## **paced work**

Any repetitive job or task which is to be carried out at a specified pace.

## **pacemaker**

(1) *General*. Any device which has a direct influence on the rate at which some process is carried out or the duration of the cycle of a process. (2) *Medical*. A center or a substance that controls the rhythm of a body process. The term usually refers to the cardiac pacemaker. The so-called "normal pacemaker" of the heart is the *sinotrial node*, a small mass of specialized muscle tissue in the heart near the junction with the superior vena cava. It sets a rhythm of contraction and relaxation that is followed by the other portions of the heart. Thus, the heartbeat is established. The normal rhythm of 60 to 100 contractions per minute is increased by physical or emotional stress, and decrease during rest. See also *circadian pacemaker* and *cardiac pacemaker*.

## **Pacific high**

See *subtropical high*.

## **Pacinian corpuscle**

A layered sensory receptor for kinesthetic information.

## **package**

To place a container in some specified pattern or sequence.

## **package freight**

In the historical tables, designates cargo consisting of miscellaneous packages generally unidentifiable as to commodity and carried only on vessels licensed by the respective authorities in Canada and the United States. This commodity classification is no longer applicable.

## **packaged laboratory chemical (PLC)**

Also called Pack-Lab Chemicals or Lab-Pack Chemicals), the term used to describe reagent chemicals packaged in sizes of one gallon or smaller into DOT-specification shipping containers for ultimate shipment to a TSD facility for landfill disposal or incineration.

## **packaging**

A receptacle and any other components or materials necessary for the receptacle to perform its containment function in conformance with the minimum packing requirements of 49 CFR, Chapter I, Subchapter C. See also *packing and crating* and *packing group*.

## **packaging inefficiency**

That amount of volume which cannot be used in packaging due to factors such as drawer frame volume, drawer slides, shelves, or object structure.

## **packed tower**

A pollution control device that forces dirty air through a tower packed with crushed rock or wood chips while liquid is sprayed over the packing material. The pollutants in the air stream either dissolve or chemically react with the liquid.

## **packer**

One whose job is to place items into containers for shipment, sale, storage, or other function.

## **packet**

A boat, usually a coastal or river steamer, that plies a regular route, carrying passengers, freight, and mail.



**packing and crating**

Establishments primarily engaged in packing, crating, and otherwise preparing goods for shipping.

**packing group**

A grouping according to the degree of danger presented by hazardous materials. Packing Group I indicates great danger; Packing Group II, medium danger; Packing Group III, minor danger.

**packing house**

A food processing plant in which animals are slaughtered, processed, and placed in cold storage.

**PACM**

See *presumptive asbestos-containing material*.

**PADS**

See *PCB Activity Database*.

**pad**

(1) Any small fatty tissue mass, such as on the terminal phalanges for the fingers, thumb, or toes. (2) One or more layers of soft materials which act to protect a part of the body from impacts or hard surface.

**paddle-wheel fan**

Centrifugal fan with radial blades.

**page**

(1) To move through a displayed file one page at a time. (2) That amount of text, graphics, or other material which comprises a printed page in hardcopy. (3) That segment of a file which may be displayed on a screen at one time.

**PAH**

Polycyclic aromatic hydrocarbons. See *polynuclear aromatic hydrocarbon*.

**paid-in capital**

Invested capital from stock subscribed or issued at a par or stated value (or the subscription value in the case of stock without par value) for preferred stock and common stock.

**paid storage**

A vehicle on assignment to a customer agency but temporarily out of service (usually a seasonally used vehicle).

**pain**

An unpleasant sensation which causes stress, discomfort, and/or suffering. It is a feeling of

distress, suffering, or agony, caused by stimulation of specialized nerve endings. Its purpose is chiefly protective (i.e., it acts as a warning that early tissue damage is taking place somewhere in the body. The receptors for the stimulus of pain are specific groups of myelinated and unmyelinated nerve fibers abundantly distributed near the surface of the body, and to a lesser degree in the internal organs. Some of the internal organs such as the lungs and uterus have comparatively few receptors, and therefore are relatively insensitive to painful stimuli. The distribution of pain receptors in the mucosa of the intestinal tract apparently is similar to that in the skin, and the mucosa is quite sensitive to irritation or other painful stimuli. Superficial pain is felt when a stimulus reaches the cutaneous receptors near the surface of the body. It is felt as a sudden, sharp pain at the site of the stimulation. Deep pain arises from stimulation of receptors in the internal structures such as the longer duration and less localized. When the receptors are stimulated, the impulses are transmitted along nerve fibers that feed into the spinal ganglia. They then travel upward along nerve fibers to the thalamus. Here the pain impulses are integrated to the sensory portion of the cerebral cortex where the pain is analyzed and its location and intensity are determined. There are two types of reaction to pain: physical and psychological. The physical reaction is usually an automatic response to superficial pain resulting from stimulation of the sympathetic nervous system and producing an outpouring of epinephrine. There is a shift of blood from the skin, brain, and intestinal tract toward the muscles; the blood pressure increases, and the pulse rate rises. This reaction soon subsides if the pain persists and remains intense. The individual then becomes weak, shows signs of shock, and may become nauseated and vomit. He/she most often seeks rest and quiet and becomes withdrawn. The psychologic aspects of pain are more complex and difficult to determine. An individual's reaction to pain depends on many factors, such as previous experience with pain, training in regard to proper and acceptable responses to pain and discomfort, state of health, and the presence or absence of fatigue. Because of their lack of experience in dealing with pain, a child's psy-

chological reactions to pain can be much more severe than that which would normally be encountered by an adult under the same injurious circumstances. *See also [pain and discomfort](#).*



*A child is not accustomed to dealing with pain and, therefore, their psychological reactions may be far more severe than with an adult under the same injurious conditions*

#### **pain and discomfort**

Term used to describe not only physical discomfort and distress but also mental and emotional trauma which are recoverable as elements of damage in torts. Recovery for pain and suffering is restricted by statute in certain states.

#### **pain threshold**

The minimum level at which one perceives pain. Also called threshold of pain.

#### **pair production**

A process by which radiation loses energy to matter. It involves the creation of a positron-electron pair from a photon of at least 1.02 MeV.

#### **paired comparisons**

*See [method of paired comparisons](#).*

#### **pajama wagon**

*Transit (slang).* Sleeper tractor.

#### **palatal**

Articulated with the tongue on or near the hard palate.

#### **palate**

The upper boundary of the mouth. The front portion, braced by the upper jaw bones (maxillae), is known as the hard palate and forms the partition between the mouth and the nose. The fleshy part arching downward from the hard palate to the throat is called the soft palate and separates the mouth and the upper throat cavity, or pharynx. When one swallows, the rear of the soft palate swings up against the back of the pharynx and blocks the passage of food and air to the nose. A fleshy lobe called the uvula hangs from the middle of the soft palate.

#### **palatine bone**

A skull bone forming part of the hard palate, the nasal cavity, and lower orbit.

#### **palatine velum**

The posterior portion of the soft palate which partially separates the mouth from the pharynx.

#### **pallet**

A platform with or without sides, on which a number of packages or pieces may be loaded to facilitate handling by a lift truck.

#### **palletize**

To place on a pallet.

#### **pallette**

A list of possible selections, especially on a computer display.

#### **pallor**

Pale or absence of skin color.

#### **palm**

The generally soft, frontal aspect of the hand in the region of the metacarpals, over which the phalanges may flex.

#### **palm length**

The linear distance from the base of the hand to the furrow where the middle finger joins the palm. Measured with the hand and fingers extended.

#### **palmar arch**

An arterial loop within the palm.

**palmar reflex**

A tendency for the fingers to flex when the palm is stimulated.

**palpate**

To examine or locate by touch and/or pressure.

**palpebral fissure**

The approximately elliptical region between the upper and lower eyelids when separated.

**palpitation**

Rapid action of the heart that is noted by the individual. It may be regular or irregular. However, a true palpitation is a heartbeat that is unusually rapid, strong, or irregular enough to make a person aware of it (usually over 120 per minute), as opposed to the normal 60 to 100 per minute. In most cases, palpitation is the result of excitement or nervousness, of strong exertion, or of the failure to take certain prescribed medications. There are also palpitations that result from various types of heart disorders such as paroxysmal tachycardia and flutter, abnormal rhythms in which the heart executes runs of rapid beats. Another is atrial fibrillation, in which the beats are rapid but irregular, seeming to occur at random. These palpitations may be caused by organic heart disease, but they also can result from other factors. Similarly, emotional pressures rather than organic changes may cause the so-called "nervous heart," or functional heart disease.

**PAMS**

Photochemical assessment monitoring station.

**pan**

(1) To scan horizontally across the surrounding visual environment such that the center of the field of view changes. (2) To shift the center of the field of view across a modeled image on a display.

**Pan Pan**

The international radio-telephony urgency signal. When repeated three times, indicates uncertainty or alert followed by the nature of the urgency. *See also* [May Day](#).

**pancake**

*Transit (slang)*. Brake diaphragm housing.

**pancreas**

A large gland located below and behind the stomach and the liver. It is composed of both

endocrine and exocrine tissue. The islands of Langerhans, being endocrine in nature, secrete two hormones: *insulin*, which plays a major role in carbohydrate metabolism, and *glucagon*, which has an effect opposite to that of insulin. The exocrine cells of the pancreas secrete pancreatic juice, which contains enzymes essential to the digestive processes. A system of ducts within the organ collects these secretions and empties them into the duodenum.

**pancytopenia**

A deficiency of all cell elements of the blood.

**pandemic**

A disease affecting the population of a widespread region, a nation, or the world (example: AIDS).

**panel body**

Small, fully enclosed truck body often used for small package delivery.

**Panel Layout And Integrated Design (PLAID)**

An interactive, three-dimensional computer modeling program used for designing aerospace crew stations and integrating crew anthropometry, lighting, and other aspects.

**panelboard**

A single panel or group of panel units designed for assembly in the form of a single panel, including buses, automatic overcurrent devices, with or without switches for the control of light, heat, or power circuits. It is designed to be placed in a cabinet or outlet box placed in or against a wall or partition and accessible only from the front. *See also* [switchboard](#).

**pant**

To breath deeply and rapidly after prolonged heavy physical exertion.

**pantothenic acid**

A vitamin of the B complex present in all living tissues, almost entirely in the form of a coenzyme A (CoA). This coenzyme has many metabolic roles in the cell and a lack of pantothenic acid can lead to depressed metabolism of both carbohydrates and fats.

**pants**

An article of clothing consisting of a single oval or tubular structure to cover the lower torso, which bifurcates into two smaller tubular-shaped structures for covering at least

part of the legs, often having some type of fastener at the waist for holding in place.

**Panum's area**

A small region within the retina in which images from the two eyes are fused, even though they may not fall precisely on corresponding points.

**papilloma**

A small growth or benign tumor of the skin or mucous membrane.

**PAPR**

See *powered air purifying respirator*.

**papular**

Characterized by a papule, which is a small, superficial, solid elevation of the skin. See also *papule*.

**papule**

A circumscribed, solid, elevated lesion of the skin, up to 5 mm in diameter.

**PAQ**

See *Position Analysis Questionnaire*.

**PAR**

See *precision approach radar*.

**para-aminobenzoic acid (PABA)**

A derivative of benzoic acid, classified as a vitamin of the B complex group but not yet proved essential in the diet of human beings. It depresses the activity of certain rickettsial infections and therefore is used in their treatment.

**parabiosis**

The cooperative association of two distinct organisms, or the anatomic and physiologic union of two animals created surgically for experimental purposes or as occurs naturally in Siamese twins.

**parabola**

A concave or convex planar curve having an equation as follows:

$$y = ax^2 + bx + c$$

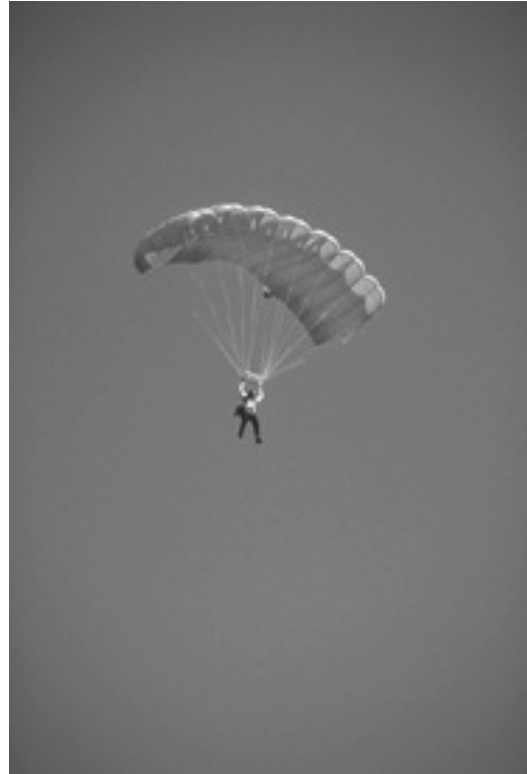
**paracentesis**

Surgical puncture and drainage of a cavity.

**parachute**

A device used or intended to be used to retard the fall of a body or object through the air. Parachutes are used primarily by people (e.g., in sport skydiving, the military, in demonstrations, etc.), but are also used to drop supplies

into remote areas (e.g., to support troops, stranded persons, etc.). In aerospace applications, multiple parachute systems are used to slow the fall or returning spaceflight hardware (e.g., space shuttle solid rocket boosters, Russian space craft, etc.).



*Sport skydiving has become an extremely popular pastime*

**parachute opening shock**

The combination of forces and torques acting on the body or other attached mass as a parachute canopy fills with air and decelerates the system.

**paracusia**

Any hearing impairment. Also referred to as *paracusis*.

**paradigm**

A model or schematic representation.

**parainfluenza virus**

One of a group of viruses isolated from patients with upper respiratory tract disease of varying severity.

**parakeratosis**

(1) Any disorder of the stratum corneum of the skin. (2) Retention of the nuclei in the cells of the keratin or stratum corneum, normally seen in true mucous membrane.

**paralexia**

A reading disability in which words or syllables are transposed or substituted.

**parallax**

A difference in the apparent relative positions of objects when viewed from different points.

**parallax error**

That observational error which may occur when reading an instrument with a dial and pointer meter due to the observer's eye not being aligned perpendicularly to the dial face.

**parallel**

(1) Pertaining to more than one operation or process ongoing at the same time. (2) Having extent or traveling in the same direction, but separated by some constant distance.

**parallel ILS approaches**

*Aviation.* Approaches to parallel runways by instrument flight rules (IFR) aircraft which, when established inbound toward the airport on the adjacent final approach courses, are radar separated by at least 2 miles.

**parallel offset route**

*Aviation.* A parallel track to the left or right of the designated or established airway/route. Normally associated with Area Navigation (RNAV) operations.

**parallel runway**

Two or more runways at the same airport whose centerlines are parallel. In addition to runway numbers, parallel runways are designated as L (left) and R (right) or, if three parallel runways exist, L (left), C (center), and R (right).

**parallelism**

The state of being parallel.

**paralysis**

Loss or impairment of the ability to move parts of the body. Paralysis is a symptom of a wide variety of physical and emotional disorders rather than a disease in itself. Paralysis results from damage to parts of the nervous system. The kind of paralysis resulting, and the degree, depend on whether the damage is to the central nervous system or the peripheral nervous system. If the central nervous system is damaged, paralysis frequently affects the movement of a limb as a whole, not the individual muscles. The more common forms of central paralysis are *hemiplegia*, in which the

whole of one side of the body, including the face, arm, and leg, is affected, and *paraplegia*, in which both legs and possibly the trunk are affected. In central paralysis the tone of the muscles is increased (spasticity). If the peripheral nervous system is damaged, individual muscles or groups of muscles in a particular part of the body, rather than a whole limb, are more likely to be affected. The muscles are flaccid, and there is often impairment of sensation. *See also paraplegia.*

**paramagnetic**

A substance is paramagnetic if it is attracted into a magnetic field. Oxygen is paramagnetic at normal temperatures and this property is a basis for measuring oxygen concentration.

**parameter**

(1) A characteristic of a population, such as the mean, standard deviation or the variance. A variable quantity or arbitrary constant appearing in a mathematical expression, each value of which restricts or determines the form of the expression. (2) An arbitrarily defined constant value under a given set of circumstances and from which other values or functions may be defined.

**parametric modeling**

Varying the size and/or orientation of one or more entities in a computer model without altering the basic geometry.

**paranoia**

A mental disorder characterized by delusions of persecution, illusions of grandeur, or a combination of both. It is a chronic disease that develops over months and years and for which there is usually no cure.

**paraoccupational exposure**

Such an exposure occurs when workers are exposed to contaminants in the workplace and carry them outside the worksite on their clothing, body, or by other means. As a result, non-workers such as family members can receive an exposure to the contaminant.

**paraplegia**

Paralysis of the legs and, in some cases, the lower part of the body. Paraplegia is a form of central nervous system paralysis in which the paralysis affects all the muscles of the parts involved. In the majority of cases, paraplegia results from disease or injury of the spinal cord that causes interference with nerve



paths connecting the brain and the muscles. Conditions that may result in such interference include physical injuries, hemorrhage, tuberculosis, tumor, and syphilis. In paraplegia, the loss of ability to use the legs may be accompanied by a loss of sensation in them and, in some cases, by loss of control over the bowels and bladder. *See also* [paralysis](#).

**paraquat**

A standard herbicide used to kill various types of crops, including marijuana.

**parasite**

An organism (often microbial) that lives at the expense of the host in or on which the organism resides. Parasites are not necessarily harmful to their host. Among the many parasites in nature, a few feed upon human hosts, causing diseases ranging from the mildly annoying to the severe and even fatal. Parasites include multicelled and single-celled animals, fungi and bacteria. Viruses are sometimes considered to be parasites.

**parasthenia**

A condition of organic tissue causing it to function at abnormal intervals.

**parasympathetic nervous system**

Pertaining to that division of the autonomic nervous system originating from the brain stem and sacral sections of the spinal cord, has its ganglia generally placed near the innervated organs, and which generally opposes the sympathetic division by performing restorative, digestive functions. Synonymous with *craniosacral*.

**parathion**

An insecticide compound, which may cause fatal poisoning in man.

**paratonia**

The resistance to passive movements of a limb.

**paratransit**

Comparable transportation service required by the American Disabilities Act (ADA) for individuals with disabilities who are unable to use fixed route transportation systems.

**parcel of air**

An imaginary small body of air a few meters wide that is used to explain the behavior of air.

**parenchyma**

The essential or functional elements of an organ.

**parent**

(1) *General*. One who has produced an offspring. (2) *Radiation*. A radionuclide which, upon disintegration, yields a specified nuclide either directly, or as a later member of the radioactive series.

**parent menu**

The initial menu displayed on entry into an application.

**parenteral**

Substance introduced into the body by a route other than by way of the intestines, such as through the skin.

**pareisis**

A weakness or incomplete form of paralysis in a limb.

**paresthesia**

(1) A morbid, abnormal, or perverted sensation. (2) A form of decompression sickness resulting in an itching, tingling, crawling, or burning sensation associated with the skin. Believed to be caused by evolved subdermal gas bubbles.

**paretic gait**

A type of gait comprised of short steps, usually with the feet dragging and the legs laterally separated.

**Pareto analysis**

The arrangement of data by priority and using that information to solve problems.

**Pareto diagram**

A graphical plot of a Pareto distribution, whether in curve or histogram form.

**Pareto distribution**

A numerical listing or graphical plot comparing value and percentages of items representing that value.

**Pareto's Law**

The concept that a majority (approximately 80%) of a given problem or other situation can often be explained by a minority (about 20%) of the cases. Also referred to as the *rule of 80-20*.

**parietal**

Pertaining to that which is situated on or forms a dividing structure, such as a wall.



**parietal bone**

A large, flat skull bone forming much of the lateral and superior part of the cranial cavity.

**park**

(1) A place or area set aside for recreation or preservation of a cultural or natural resource. *See also parkway.* (2) The act of placing a vehicle into a designated place and/or position.

**park and ride**

An access mode to transit in which patrons drive private automobiles or ride bicycles to a transit station, stop, or carpool/vanpool waiting area and park the vehicle in the area provided for the purpose. They then ride the transit system or take a car- or vanpool to their destinations.

**park and ride lot**

Designated parking area for automobile drivers who then board transit vehicles from these locations.

**parking area**

An area set aside for the parking of motor vehicles.

**parking brake**

A mechanism designed to prevent the movement of a stationary motor vehicle.

**parking brake system**

A brake system used to hold a vehicle stationary.

**Parkinson's disease**

A progressive disease of the brain occurring in later life, characterized by stiffness of muscles and tremors. Parkinson's disease usually appears gradually and progresses slowly. At first the victim may be troubled by mild tremors of the hands and nodding of the head. He/she may also notice that movements are somewhat slower and more difficult than usual. Then, loss of mobility in the face produces the characteristic mask-like expressions. As the disease advances, the tremors increase and may involve the whole body, although gradually they are not apparent with intentional movements. The muscles become stiffer, making movement increasingly difficult. The gait becomes shuffling and festinating. The back tends to become bent forward in a stooped position. Parkinson's disease does not affect mental capacity; however,

the disease is caused by damage to several small areas of the brain: the *substantia nigra*, the *globus pallidus*, and the *thalamus*. In some cases, the damage may be the result of a viral infection or of carbon monoxide poisoning. In later life, the cause may be cerebral arteriosclerosis. When the cause is known, the condition is usually called *parkinsonism*. However, in a large number of patients the cause is not apparent and in these patients the condition is called Parkinson's disease.

**parkway**

A highway that has full or partial access control, is usually located within a park or a ribbon of park-like developments, and prohibits commercial vehicles. Buses are not considered commercial vehicles in this case. *See also park.*

**parol evidence**

Oral or verbal evidence; that which is given by word of mouth; the ordinary kind of evidence given by a witness in court.

**paronychia**

Infection involving the folds of tissue surrounding the fingernail. The causative organisms may be bacteria or fungi, which usually gain entrance through a hangnail or break in the skin due to improper manicuring.

**parotid**

Near the ear.

**paroxysm**

A sudden appearance, reappearance, or intensification of symptoms.

**Part 572 dummy**

*See Hybrid III.*

**part family**

A set of parts having some specifiable similarities.

**part learning**

A learning situation in which the entire set of material to be learned is divided into segments where each segment is learned separately, with eventual learning of all segments. *See also whole learning.*

**part-task simulation**

That type of simulation which provides an individual or group the ability to learn only selected portions of a total task.

**part-task trainer (PTT)**

A training device which provides an individual or group with the ability to learn only portions of the total task.

**part-time employment**

That working arrangement involving an employee having a set or variable number of hours less than the standard work week, or less than about 35 hours per week.

**partial body irradiation**

Pertains to the case in which part of the body is exposed to the incident electromagnetic radiation.

**partial disability**

Any disability other than death or total disability resulting in some loss of the use of a bodily member or function.

**partial pressure**

The part of the total pressure of a mixture of gases that is contributed by one of the constituents. In any gas mixture the total pressure is equal to the sum of the pressures each gas would exert if it were alone in the volume occupied by the mixture.

**partial tone**

A simple tone which is a component of a complex tone.

**participating agency**

A federal department or agency which transferred (consolidated) vehicles to the Inter-agency Fleet Management System (IFMS).

**particle**

A small, distinct masses of solid or liquid matter such as dust, fume, mist, or smoke.

**particle size**

The measured dimension of liquid or solid particles, usually expressed as the diameter in microns.

**particle size distribution**

The statistical distribution of the size or mass of an aerosol. It is typically described by the geometric mean and standard deviation of the distribution. The data are useful in estimating aerosol exposure to various regions of the respiratory tract.

**Particle Size-Selective TLVs**

Exposure limits that recognize the size fraction most closely associated for each substance with the health effect of concern, and

the mass concentration within that size-fraction which should represent the TLV.

**particulate**

(1) A fine liquid or solid particle such as dust, smoke, mist, fumes, or smog, found in air or emissions. Settled particulates, such as dust and fumes, can be re-suspended in the air. (2) Carbon particles formed by partial oxidation and reduction of the hydrocarbon fuel. Also included are trace quantities of metal oxides and nitrides, originating from engine wear, component degradation, and inorganic fuel additives. In the transportation sector, particulates are emitted mainly from diesel engines.

**particulate matter (PM)**

A suspension of solid or liquid particles in air. Also referred to as an aerosol.

**partition**

Any dividing structure which has relatively small thickness compared to height and length such as a wall or cardboard which serves to isolate individuals or objects from each other for sound attenuation, protection, privacy, or other purposes.

**partition coefficient**

See *distribution coefficient*.

**partly cloudy**

Pertaining to a sky which has about 30-70% cloud cover.

**parts per billion (ppb)**

Unit of concentration, such that one part of a contaminant is present in one billion parts of air or other media by volume.

**parts per million (ppm)**

An expression of concentration as the number of parts of a contaminant in a million parts of air or other media by volume.

**parts per trillion (ppt)**

An expression of concentration, such that one part of a contaminant is present in one trillion parts of air or other media.

**party**

(1) *OSHA*. A person admitted to participate in a hearing conducted under the authority of the OSHAct. An applicant for relief and any affected employee shall be entitled to be parties. The Department of Labor, represented by the Office of the Solicitor, shall be deemed

to be a party without the necessity of being named.

**Pascal (Pa)**

The metric unit of pressure measurement equal to a force of one Newton acting on an area of one square meter.

**Pascal's Law**

A rule that a confined fluid transmits any externally imposed pressure equally in all directions.

**pass**

Any one of several distributary channels near the mouth of a river.

**pass cells**

Piers on each side of the navigable pass of a dam.

**pass sill gauge**

Gauge indicating depth through navigable pass.

**pass-through funds**

*Transit.* Operating financial assistance passed through to other transit agencies that have no relationship to the directly operated and/or purchased transportation services provided by the designated recipient.

**passageway**

A corridor which is of sufficient height and width to permit movement between two points.

**passenger**

(1) *General.* A person who gives compensation to another for transportation. (2) *Maritime.* With respect to vessels and for the purposes of 49 CFR 176, only means a person being carried on a vessel other than the owner or his/her representative; the operator; a bona fide member of the crew engaged in the business of the vessel who has contributed no consideration for his/her carriage and who is paid for his/her services; or a guest who has not contributed any consideration directly or indirectly for his/her carriage. (3) *Rail Operations.* A person who is on, boarding, or alighting from a railroad car for the purpose of travel, without participating in its operation. (4) *Transportation.* Any occupant of a motor vehicle who is not a driver.

**passenger automobile**

A passenger automobile is any automobile (other than an automobile capable of off-highway operation) manufactured primarily for use in the transportation of not more than 10 individuals.

**passenger car**

(1) *Rail Operations.* A unit of rolling equipment intended to provide transportation for members of the general public, including self-propelled cars designed to carry baggage mail, express, and passengers. (2) *Transit.* Any motor vehicle that is a convertible; 2-door sedan, hardtop, or coupe; a 4-door sedan or hardtop; a 3- or 5-door hatchback coupe; an automobile with pickup body; or station wagon. Also, any motor vehicle that is an automobile, auto-based pickup, large limousine, or three-wheel automobile or automobile derivative. Also, motor vehicles used primarily for carrying passengers, including convertibles, sedans, and station wagons.

**passenger car equivalence**

The representation of larger vehicles, such as buses, as equal to a quantity of automobiles (passenger cars) for use in level of service and capacity analyses.

**passenger-carrying aircraft**

An aircraft that carries any person other than a crew member, company employee, an authorized representative of the United States, or a person accompanying the shipment.

**passenger-carrying volume**

The sum of the front seat volume and, if any, rear seat volume, as defined in 40 CFR 600.315, in the case of automobiles to which that term applies. With respect to automobiles to which that term does not apply, "passenger-carrying volume" means the sum in cubic feet, rounded to the nearest 0.1 cubic feet, of the volume of a vehicle's front seat and seats to the rear of the front seat, as applicable, calculated in 49 CFR 523.2 with the head room, shoulder room, and leg room dimensions determined in accordance with the procedures outlined in Society of Automotive Engineers (SAE) Recommended Practice J1100a, Motor Vehicle Dimensions (Report of Human Factors Engineering Committee, Society of Automotive Engineers, approved September 1973 and last revised September 1975).

**passenger count**

A count of the passengers on a vehicle or who use a particular facility.

**passenger enplanements**

The total number of passengers boarding an aircraft.

**passenger facility charge (PFC)**

Public agencies controlling a commercial service airport can charge enplaning passengers using the airport a \$1, \$2, or \$3 facility charge. Public agencies must apply to the FAA and meet certain requirements to impose a PFC. *See also apportionment.*

**passenger flow**

The number of passengers who pass a given location in a specified direction during a given period.

**passenger load factor**

The percent that revenue passenger miles are of available seat-miles in revenue passenger services, representing the proportion of aircraft seating capacity that is actually sold and utilized.

**passenger mile**

(1) *Aviation.* One passenger transported one mile. Total passenger miles are computed by summation of the products of the aircraft miles flown on each inter-airport flight stage multiplied by the number of passengers carried on that flight stage. Also, one passenger transported 1 mile. Passenger miles are computed by the summation of the products of the aircraft-miles flown on each inter-airport flight multiplied by the number of passengers carried on the flight. (2) *Rail Operations.* The movement of a passenger for one mile. (3) *Transit.* The total number of miles traveled by passengers on transit vehicles; determined by multiplying the number of unlinked passenger trips times the average length of their trips. Also, the cumulative sum of the distances ridden by each passenger. Also, the total number of miles traveled by transit passengers (e.g., a bus that carries 5 passengers for a distance of 3 miles incurs 15 passenger miles).

**passenger-miles traveled (PMT)**

One person traveling the distance of one mile. Total passenger-miles traveled by all persons.

**passenger per aircraft mile**

The average number of passengers carried per aircraft in revenue passenger services, derived by dividing the total revenue passenger-miles by the total aircraft miles flown in revenue passenger services.

**passenger revenue**

Money, including fares and transfer, zone, and park-and-ride parking charges, paid by transit passengers; also known as "farebox revenue."

**passenger revenue ton mile**

One ton of revenue passenger weight (including all baggage transported one mile). The passenger weight standard for both domestic and international operations is 200 pounds.

**passenger service**

*Rail Operations.* Both intercity rail passenger service and commuter rail passenger service.

**passenger service expenses**

*Aviation.* Costs of activities contributing to comfort, safety, and convenience of passengers while in flight and when flights are interrupted. Includes salaries and expenses of flight attendants and passenger food expenses.

**passenger vehicle**

A vehicle with a Gross Vehicle Weight Rating (GVWR) of 10,000 pounds or less which includes passenger cars, light pickup trucks, light vans, and utility vehicles.

**passenger vehicle crash**

A motor vehicle crash involving at least one passenger vehicle.

**passenger vessel**

(1) A vessel subject to any of the requirements of the International Convention for the Safety of Life at Sea, 1974, which carries more than 12 passengers. (2) A cargo vessel documented under the laws of the United States and not subject to that Convention, which carries more than 16 passengers. (3) A cargo vessel of any foreign nation that extends reciprocal privileges and is not subject to that Convention and which carries more than 16 passengers. (4) A vessel engaged in a ferry operation and which carries passengers.

**passengers on trains (Class C)**

Persons who are on, boarding, or alighting from railroad cars for the purpose of travel.

**passing daymark**

A rectangular or triangular daymark used on lights which are intended for position reference only and are not to be steered upon.

**passive**

Resulting from external causes and without volitional effort by the entity being acted upon.

**passive device**

A device that permits signals to transmit through it without modifying the signals.

**passive institutional control**

With regard to radiation protection programs, permanent markers placed at a disposal site; public records and archives; government ownership and regulations regarding land or resource use; and other methods of preserving knowledge about the location, design, and contents of a disposal system.

**passive isolation**

That energy attenuation through the use of a system or mechanism not requiring energy to operate and acting near or within another system which is generating some undesired energy output.

**passive movement**

The movement of some limb or more of the body by another person or device without conscious active participation by the individual being moved.

**passive restraint**

Any type of restraint in which an individual must make a conscious effort to remain in place.

**passive safety measure**

Any means of implementing safety precautions which does not require any action on the part of the individual for operation or utilization of the mechanism or device.

**passive sampler**

See *diffusion detector*.

**passive sampling**

A sampling methodology in which air, containing a contaminant, penetrates through a semipermeable membrane, where it is either adsorbed on a solid sorbent, absorbed in a liquid sorbent, or detected by a passive type detector (e.g., electrochemical, catalytic, etc.). See also *diffusion detector*.

**paste**

To place a section of previously cut text, data, or graphics into a document or computer file.

**pastel**

Pertaining to an unsaturated color or color with low saturation.

**pasteurization**

(1) *General*. A process of arresting or preventing fermentation in liquids, as beer, milk, wine, etc., by heating so as to destroy the vitality of the ferment. (2) *Sludge*. A process to reduce pathogens in solid waste by maintaining the sludge for at least 30 minutes at a minimum temperature of 158°F (70°C).

**PAT sample**

A Proficiency Analytical Testing sample from NIOSH for assessing performance of those laboratories involved in the analysis of workplace air samples and who want to be accredited, or to maintain accreditation by the American Industrial Hygiene Association.

**patella**

A sesamoid bone anterior to the knee joint. More commonly referred to as *knee cap*.

**patella bottom height**

The vertical distance from the floor or other reference surface to the lowest point on the inferior border of the patella. Measured with the individual standing erect, his/her weight equally distributed, and the leg/hip muscles not tensed.

**patella top height**

The vertical distance from the floor or other reference surface to the highest point on the superior border of the patella. Measured with the individual standing erect, his/her weight equally distributed, and the leg/hip muscles not tensed.

**patent**

(1) Open or accessible. (2) A grant by some governing body having the appropriate authority to permit the exclusive right to manufacture or sell an invention for a specified period of time.

**patent ambiguity**

That uncertainty due to wording which can be interpreted in more than one way.

**pathogen**

Any viral, rickettsial, bacterial, fungal, or parasitic microorganism capable of causing disease in humans, animals, or plants.

**pathogenesis**

The cellular events, reactions, and other pathologic mechanisms that occur in the development of disease.

**pathogenic**

An agent, usually infectious, that is capable of causing disease.

**pathogenic bacteria**

Bacteria which may cause disease or morbid symptoms in the host organism by their parasitic growth.

**pathogenicity**

The capacity of an agent to cause disease in a susceptible host.

**pathological**

Abnormal or diseased.

**pathological reflex**

Any reflex which differs in strength, type, or reaction time from the norm.

**pathology**

The branch of medicine concerned with all aspects of disease, but having special reference to the causes and development of abnormal conditions and any structural or functional changes that occur as a result of disease.

**patient**

A person under medical or psychiatric treatment and care.

**patient-physician privilege**

The right of a patient to refuse to divulge, or to have his/her physician divulge, the communications made between them. This privilege is provided for by statute in most states, and, where recognized, it belongs to the patient and not to the physician and hence, it may be waived only by the patient.

**patient's bill of rights**

A general statement of patient rights, voluntarily adopted by most health care providers, covering matters such as access to care, patient dignity and confidentiality, personal safety, consent to treatment, and explanation of charges. Similar rights have been statutorily adopted in several states and by the fed-

eral government (e.g., Developmentally Disabled Assistance and Bill of Rights Act of 1975, 42 U.S.C.A. § 6010).

**patron**

A person who intends to use or has used the transit system and is on property affiliated with the transit system. An employee is not a patron.

**patten**

A structural support which provides a high sole on one shoe which reduces the weight-bearing requirement on the other leg.

**pattern**

(1) A form or mold used in the manufacturing of an item. (2) An integration of many elements which is perceived as a larger unit.

**pattern coding**

Any set of perceptual indicator(s) which may be used to differentiate areas of interest to an observer or reduce operator search time.

**pattern recognition**

An automated, electronic process for identifying a canned or other input image consisting of a predetermined set of alphanumeric characters, symbols, or other shapes.

**Paul-Bunnell test**

A method of testing for the presence of heterophil antibodies in the blood.

**pause**

A temporary cessation of an ongoing activity.

**paved road surface**

Bituminous, concrete, brick, block, and other special surfaces.

**paved surface**

Surface of asphalt or concrete.

**pay differential**

That difference in pay to workers for working under certain conditions, such as shift work.

**payload**

(1) *Transit (general)*. The maximum load that a unit of equipment may carry within its total rated capacity. The payload is the Gross Vehicle Weight Rating (GVWR) less the tare weight or actual weight of the unloaded vehicle. (2) *Transit (shipping)*. Weight of commodity being hauled. Includes packaging, pallets, banding, etc. but does not include the truck, truck body, etc. (3) *Aerospace*. Term used to describe the items that are launched



aboard a space flight vehicle, such as satellites and/or scientific experiments.

**payout time**

That temporal period required to recover an original investment.

**PB**

See *phonetically balanced*.

**PBB**

Polybrominated biphenyl.

**PCB**

See *polychlorinated biphenyl*.

**PCB Activity Database (PADS)**

According to the Toxic Substances Control Act (TSCA): The EPA regulates the storage and disposal of PCBs. Those who handle PCBs are required to notify the EPA of their PCB waste activities. PADS contains this list of notifiers.

**PCB article**

Any manufactured article that contains PCBs and whose surfaces have been in direct contact with PCBs (excludes PCB containers).

**PCB-contaminated transformer**

A transformer containing 50 ppm or greater of PCBs but less than 500 ppm.

**PCB transformer**

A transformer that contains 500 ppm PCBs or greater.

**PCE**

See *personal consumption expenditure*.

**pcf**

Pound(s) per cubic foot.

**PCM**

Phase contrast microscopy. See also *pulse code modulation*.

**PDF**

See *probability distribution function*.

**PE**

(1) See *professional engineer*. (2) See *potential evapotranspiration*.

**P/E index**

See *precipitation-evaporation index*.

**P/E ratio**

See *precipitation-evaporation ratio*.

**peak**

(1) A maximum value or highest point. (2) A maximum positive or maximum negative value in a waveform.

**peak concentration**

The concentration of an airborne contaminant that may be much higher than the average and typically occurs for only short periods of time.

**peak exposure**

The highest concentration that occurs or has occurred during a sampling period.

**peak height velocity**

That point during physical maturation at which stature increases at its fastest rate.

**peak kilowatt**

One thousand peak watts.

**peak megawatt**

One million peak watts.

**peak noise level**

The maximum instantaneous sound pressure level that occurs for a short duration or in a specified time interval.

**peak period surcharge**

*Transit*. An extra fee required during peak periods (rush hours).

**peak sound pressure level**

The maximum instantaneous level that occurs over any specified time period and is usually measured in decibels.

**peak-to-peak amplitude (p-p)**

That algebraic difference between the maximum and minimum quantities within a cycle of a waveform.

**peak-to-peak value**

See *peak-to-peak amplitude*.

**peanut wagon**

*Transit (slang)*. Small tractor pulling a large trailer.

**Pearson product-moment correlation coefficient (r)**

A numerical value, ranging from a low of -1.0 to +1.0, which indicates the degree of linear correlation between two normally distributed variables, as follows:

$$r_{xy} = \frac{N \sum XY - \sum X \sum Y}{\sqrt{N \sum X^2 - (\sum X)^2} \sqrt{N \sum Y^2 - (\sum Y)^2}}$$

(computational)

$$r_{xy} = \frac{\sum_{xy}}{N s d_x s d_y}$$

(theoretical)

where:  
 $X, Y$  = raw score values of X and Y variables, respectively  
 $x, y$  = deviation scores from the mean for X and Y, respectively  
 $sd_x, sd_y$  = respective standard deviations  
 $N$  = number of total cases in the sample

Note: 0.0 represents no correlation, with correlation increasing as the value approaches  $\pm 1.0$ .

**peat**

Peat consists of partially decomposed plant debris. It is considered an early stage in the development of coal. Peat is distinguished from lignite by the presence of free cellulose and a high moisture content (exceeding 70 percent). The heat content of air-dried peat (about 50 percent moisture) is about 9 million Btu per ton. Most U.S. peat is used as a soil conditioner. The first U.S. electric power plant fueled by peat began operating in Maine in 1990.

**pectoral muscle**

A large skeletal muscle overlying the ribs in the region between the sternum and the shoulder. Also known as the *pectoralis major*. The underlying pectoralis minor muscle is not normally of significance in human factors engineering.



*Well-developed pectoralis major muscles showing striation of the muscle fibers under the skin*

**pectoral skinfold**

The thickness of a skinfold taken over the pectoral muscle beginning at the anterior axillary fold and with its length directed toward the nipple. Measured with the individual standing erect, the neck, shoulder, and torso

muscles relaxed. May be referred to more commonly as chest skinfold.

**pectus**

The breast, chest, or thorax.

**pecuniary**

Monetary; relating to money. Consisting of money or that which can be valued in money.

**pecuniary damages**

Damages that can be estimated in and compensated for by money; not merely the loss of money or salable property or rights, but all such loss, deprivation, or injury as can be made the subject of calculation and recompense in money. Those damages (either general or specific) which can be accurately calculated in monetary terms.

**pedal**

A control, normally operated by the foot, which involves some type of motion for operation.

**pedal cycle**

Vehicle propelled by human power and operated solely by pedals; excludes mopeds.

**pedal cyclist**

A person on a vehicle that is powered solely by pedals.

**pedestrian**

Any person not in or upon a motor vehicle or other vehicle.

**pedestrian accident**

Is any person injured or killed in a highway motor vehicle accident who is not a vehicle occupant.

**pedestrian fatality**

Are the number of pedestrians fatally injured in motor vehicle accidents.

**pedestrian walkway**

A continuous way designated for pedestrians and separated from the through lanes for motor vehicles by space or barrier.

**peduncle**

A stem-like part; applied to collections of nerve fibers coursing between different regions in the central nervous system.

**peg-leg**

*Transit (slang)*. Tandem tractor with only one power axle.

**peg line**

A line used in locks to prevent barge movement.

**pegs**

Small, bent metal bars countersunk in lock walls and arranged in a vertical line for hooking mooring lines on. Care must be taken that lines do not get hung up on these pegs as the vessel rises or drops in the lock.

**PEL**

See *permissible exposure limit*.

**PEL-C**

See *permissible exposure limit-ceiling*.

**PEL-STEL**

See *permissible exposure limit-short term exposure limit*.

**PEL-TWA**

See *permissible exposure limit-time weighted average*.

**pellagra**

A disease caused by a diet seriously deficient in niacin, or nicotinic acid. Most persons with pellagra also suffer from deficiencies of vitamin B2 (riboflavin) and other essential vitamins and minerals. Chief symptoms of pellagra are various skin, digestive, and mental disturbances. The mouth becomes inflamed and the tongue red and sore. Cracks and sores appear in the skin around the mouth. The skin on the back of the hands may become red, thick, and scaly. This might also occur to the neck and chest (all areas exposed to sunlight and/or the chafing of clothing). Vomiting and loss of appetite occur. Diarrhea often occurs early and becomes worse as the disease progresses, thus hampering treatment by preventing effective absorption of essential vitamins. Mental symptoms may be variable. In some cases, there may be only insomnia and minor depression. In other cases, the sufferer may become stuporous or on the contrary become violent and irrational. Headache, irritability, and general anxiety may also be present.

**pelvic**

Pertaining to the pelvis.

**pelvic bone**

See *coxal bone*.

**pelvic breadth**

See *biiliocristale breadth*.

**pelvic girdle**

The right and left coxal bones joined to form the complete bilateral hip structure.

**pelvic impact area**

That area of the door or body side panel adjacent to any outboard designated seating position which is bounded by horizontal planes 7 inches above and 4 inches below the seating reference point and vertical transverse planes 8 inches forward and 2 inches rearward of the seating reference point.

**pelvimetry**

The measurement of the inlet and outlet size(s) of the birth canal.

**pelvis**

The combination of the pelvic girdle, sacrum, and coccyx bones.

**penal**

Punishable. Inflicting a punishment; containing a penalty, or relating to a penalty.

**penal action**

In its broadest sense, refers to criminal prosecution. More particularly, it refers to a civil action in which a wrongdoer is subject to a fine or penalty payable to the aggrieved party (e.g., punitive damages).

**penal code**

The bringing together and codification of substantive criminal laws of the state or federal government.

**penal laws**

This term, in general, refers to state and federal statutes that define criminal offenses and specify corresponding fines and punishment. Statutes imposing a penalty, fine, or punishment for certain offenses of a public nature or wrongs committed against the state.

**penale height**

The vertical distance from the floor or other reference surface to the upper edge of the junction of the penis with the abdomen. Measured with the individual standing erect, his weight equally distributed between both feet, and the penis flaccid.

**penalty**

An elastic term with many different shades of meaning. It involves an idea of punishment, corporeal or pecuniary, civil or criminal, although its meaning is generally confined to pecuniary punishment. The law requires

payment of a penalty (a sum of money) as punishment for doing some prohibited act or for not doing some act which is required to be done.

**penetrating encapsulant**

A liquid material that is applied to asbestos-containing material to control the release of asbestos fibers by bonding the material together.

**penetration**

A mechanism by which a substance enters through a barrier via an imperfection such as a rip or a tear.

**penicillin**

An antibiotic substance extracted from cultures of certain molds of the genus *Penicillium* that have been grown on special media.

**peninsula**

A body of land jutting out into and nearly surrounded by water.

**penis**

The sensitive male erectile organ involved in urination and copulation.

**penumbra**

That region of an ionization track within a tissue or other material beyond the umbra, and which is due to recoiling electrons.

**people mover**

An automated transportation system (e.g., continuous belt system or automated guideway transit) that provides short-haul collection distribution service, usually in a major activity center.

**pepsin**

A proteolytic enzyme that is the principal digestive component of gastric juice. It acts as a catalyst in the chemical breakdown of protein. Pepsin also has a milk-clotting action similar to that of rennin and thereby facilitates the digestion of milk protein.

**peptic**

Pertaining to pepsin or to digestion.

**peptic ulcer**

A sore on the inner wall of the digestive tract in or near the stomach. There are two kinds of peptic ulcers: *gastric* ulcers occur in the stomach and *duodenal* ulcers which occur in the duodenum, the part of the small intestine nearest the stomach.

**per occurrence financial ability**

Refers to the amount of money that must be available to pay the cost of one accidental release.

**perceived noise level**

The noise level, in decibels, assigned to a noise by means of a calculation procedure that is based on an approximation to subjective evaluations of noisiness.

**percent of enplanement**

The percent that a community's enplaned passengers is of the total enplaned passengers in all services and all operations for all communities within the 50 States, the District Columbia, and other U.S. areas designated by the Federal Aviation Administration.

**percent scheduled aircraft miles completed**

Scheduled aircraft miles completed (excluding extra sections) as a percent of total aircraft miles scheduled.

**percentage depth dose**

Amount of radiation delivered at a specified depth in tissue, expressed as a percentage of the amount delivered at the skin.

**percentile**

A value or score representing the percentage of people at or below a certain measurement on a given dimension within a specified cumulative distribution. *See also centile.*

**perception**

The conscious mental awareness of a sensory stimulus.

**perception deafness**

Auditory nerve of cochlear deafness.

**perceptual adaptation**

A semi-permanent change in perception or perceptual-motor coordination which serves to effectively reduce or eliminate an apparent discrepancy between or within sensory modalities or the errors introduced by this discrepancy.

**perceptual load**

A measure of the amount of information an individual is expected to acquire and process within a given period of time.

**perceptual-motor performance**

A measure of the ability to conduct any activity which involves a combination of the indi-

vidual's sensory, cognitive, and motor functions.

**perceptual-motor task**

Any activity involving an overt movement to a non-verbal stimulus.

**perceptual overload**

A condition in which more information is being received by the senses than can be processed or understood.

**perceptual skill**

The relative proficiency in detecting and interpreting information received from sensory inputs.

**perceptual speed**

The rate at which one can accurately compare presented objects, either simultaneously or sequentially.

**perceptual work**

Any activity which requires the senses for information gathering and involves any necessary integration of that information.

**percolation**

The movement of water downward and radially through the subsurface soil layers, usually continuing downward to the ground.

**percutaneous**

Administered or absorbed through the unbroken skin, such as the absorption of a hazardous material (e.g., phenol, hydrazine, etc.).

**percutaneous absorption**

The absorption of materials through the skin or other exposed body surfaces.

**perforation**

A hole or break in the containing walls or membranes of an organ or structure of the body. Perforation occurs when erosion, infection, or other factors create a weak spot in the organ and internal pressure causes a rupture. It also may result from a deep penetrating wound caused by trauma.

**performance**

(1) A measure of the output or capability of some system. (2) *See human performance.*

**performance aid**

Any job aid, training, or other device or system which is intended for or capable of improving human performance.

**performance analysis**

An examination of performance indices, measures, and standards for their relevance, appropriateness, and correctness.

**performance assessment**

With regard to radiation protection programs, an analysis that identifies the processes and events that might affect the disposal system; examines the effects of these processes and events on the performance of the disposal system; and estimates the cumulative releases of radionuclides, considering the associated uncertainties, caused by all significant processes and events. These estimates shall be incorporated into the overall probability distribution of cumulative release to the extent practicable.

**performance curve**

A graphical curve illustrating quantitative accomplishments plotted against some reference variable such as time.

**performance decrement**

A decline in human or machine output quality or quantity for whatever reason.

**performance index**

The value of the ratio of some standard work output to actual operator work output. Also referred to as *performance ratio* and *operator productivity*. *See also performance rating.*

**performance measure**

Any objective or subjective instrument developed to evaluate personnel or equipment effectiveness.

**performance measurement**

The process of accumulating or assessing worker, group, or equipment accomplishments with respect to a performance standard.

**performance operating characteristics**

A performance tradeoff curve or function indicating how performance on one task is affected by concurrent performance on a second task.

**performance rating**

(1) A quantitative value representative of worker performance with respect to what is considered normal performance. Also called *pace rating*, *operator productivity*, or *effort rating*. *See also performance index.* (2) The process of using any system or method for

evaluating or setting employee performance standards. *See also leveling.*

**performance sampling**

The use of any technique for observing one or more workers during the execution of a given task as part of a performance evaluation.

**performance shaping factor**

Any aspect of the individual and environment which predisposes humans toward a certain performance level.

**performance standard**

(1) *General.* Any criterion or benchmark measure of performance, against which actual performance may be compared. (2) *OSHA.* An OSHA standard that essentially tells the employer *what* safety or health goal is to be obtained. It provides details on minimally acceptable program requirements in areas such as safety training, recordkeeping, or communicating hazards to workers. A performance standard outlines the level of performance that must be demonstrated. It provides flexibility to the employer to develop a compliance strategy that is reflective of the needs of the facility. That is, it allows the employer to choose the most appropriate pathways to achieve compliance. Examples include the Respiratory Protection Standard (29 CFR 1910.134) and the Hazard Communication Standard (29 CFR 1910.1200).

**performance technologist**

One who is qualified by experience, education, and training to practice performance technology.

**performance technology**

That acquired knowledge which provides for the conceptualization, design, development, implementation, and analysis of systems intended to optimize performance.

**perfusional change**

A change in the blood flow rate.

**pericarditis**

Inflammation of the pericardium, the fibrous sac that encloses the heart. There are many forms of pericarditis. Acute pericarditis is usually secondary to some other bacterial infection, for example, osteomyelitis, lung abscess, or pneumonia. It may also occur without bacterial infection, resulting from a tumor, rheumatic heart disease, uremia, or coronary

thrombosis, or it may be the aftermath of a chest wound in which the pericardium is pierced. Acute pericarditis may be dry, or fibrinous, in which a fibrinous exudate forms on the serous membrane, or it may occur with effusion, that is, with accumulation of fluid in the pericardial cavity. Occasionally, the pericardium is affected directly by what appears to be a virus in a condition called acute non-specific pericarditis. Symptoms vary with the cause but usually include chest pain and dyspnea, an increase in the pulse rate, and a rise in temperature.

**pericardium**

The fibroserous sac enclosing the heart, composed of external (fibrous) and internal (serous) layers.

**perils of the sea**

Those causes of loss of goods for which the carrier is not legally liable. The elemental risks of ocean transport.

**perilymph**

A clear fluid within the osseous labyrinth of the inner ear, and within which the membranous labyrinth is located.

**perineum**

The region at the base of the torso in the pubic crotch near the midsagittal plane, extending anterior-posterior from the pubic arch to the coccyx, and laterally between the ischial tuberosities.

**period**

In the study of vibration, the time required for a complete oscillation or for a single cycle of events.

**periodic data**

That form of deterministic data which has a clearly established repeating cycle.

**periodic table**

A systematic classification and arrangement of the chemical elements according to their atomic numbers and their physical and chemical properties.

**periodontitis**

Inflammation of the tissues around a tooth. The condition is caused by residual food, bacteria, and calcium deposits (tartar) that collect in the spaces between the gum and lower part of the tooth crown. If it continues unchecked, the infection will spread to the



bone in which the teeth are rooted. The bone then resorbs and the teeth are slowly detached from their supporting tissues.

**periosteum**

A specialized connective tissue covering all bones of the body, and possessing bone-forming potentialities. Periosteum also serves as a point of attachment for certain muscles. The connective tissues of the muscles fuse with the fibrous layers of periosteum.

**peripheral**

Situated away from a center or central structure.

**peripheral nervous system (PNS)**

That portion of the nervous system outside the brain and spinal cord. *See also **autonomic nervous system** and **central nervous system**.*

**peripheral neuropathy**

Any disease involving the peripheral nervous system. *See also **peripheral polyneuropathy**.*

**peripheral polyneuropathy**

A progressive and potentially irreversible disorder of the peripheral nervous system. Also referred to as peripheral neuropathy. N-hexane is one substance that has caused this disease.

**peripheral vision**

The ability to see or sense objects, motion, or light due to stimulation of the portions of the retina away from the fovea centralis while the gaze is directed straight ahead at a fixed point. *See also **foveal vision**.*

**peripheral visual field**

That portion of the visual field which lies beyond that which impinges on the foveal region of the retina.

**periscope liberty**

The permission to observe outside a submerged submarine through the periscope.

**perishable goods**

Goods which quickly decay and lose their value if not put to their intended use within a short period of time.

**peristalsis**

A wavelike progression of alternate contraction and relaxation of the muscle fibers of the esophagus and intestines, by which contents are propelled along the alimentary tract. When food is swallowed, it passes into the

esophagus. Muscular contractions in the wall of the esophagus work the food downward, pushing it into the stomach. Here peristaltic contractions not only move the food in small amounts into the intestine but also aid in the disintegration of the food and help mix it with gastric juice. Peristalsis forces the food through the intestine for further digestion until the food waste finally reaches the rectum, from which it is periodically discharged from the body. The waves of peristalsis are irregular; they are stronger at some times than others. They are also weaker in some people, notably the elderly. Although the normal peristaltic wave action is downward, it is sometimes reversed. Reverse peristaltic action may be triggered by mild digestive upsets or more serious disorders, such as obstruction in the stomach or intestines.

**peritoneal**

Pertaining to the peritoneum.

**peritoneum**

The membrane that lines the abdominal cavity and the pelvic region.

**peritonitis**

Inflammation of the peritoneum. Acute peritonitis may be produced by inflammation of abdominal organs; by irritating substances from a perforated gallbladder or gastric ulcer; by rupture of a cyst; or by irritation from blood, as in cases of internal bleeding.

**perjury**

In criminal law, the willful assertion as to a matter of fact, opinion, belief, or knowledge, made by a witness in a judicial proceeding as part of his/her evidence, either upon oath or in any form allowed by the law to be substituted for an oath, whether such evidence is given in open court, or in an affidavit, or otherwise, such assertion being material to the issue or point of inquiry and known to the witness to be false.

**permafrost**

A layer of soil beneath the Earth's surface that remains frozen throughout the year.

**permanent disability**

Permanent impairment, including any degree of impairment such as an amputation of a finger, permanent impairment of vision, or other permanent crippling nonfatal injury.

**permanent employment**

As provided for by contract, means only that employment is to continue indefinitely and until either party wishes to sever the relationship for some good reason.

**permanent echo**

Radar signals reflected from fixed objects on the Earth's surface; e.g., buildings, towers, terrain. Permanent echoes are distinguished from "ground clutter" by being definable locations rather than large areas. Under certain conditions they may be used to check radar alignment.

**permanent gas**

Term used to describe a gas that cannot be liquefied at normal ambient temperatures.

**permanent injury**

One where the situation has stabilized and permanent damage is reasonably certain. Physical or mental impairment or disability which will last throughout life, or injury reasonably certain to be followed by permanent impairment of earning capacity or one producing permanent irremediable pain.

**permanent menu**

A menu which is constantly and inseparably part of a display.

**permanent night shift**

A non-rotating shift in which workers remain assigned to the third shift indefinitely.

**permanent swap file**

*Computing.* Windows creates this type of swap file only once, and the space it occupies on the hard disk is not available for any other purpose, even when Windows is not running. This is the only drawback to a permanent swap file; however, if the user works primarily in Windows, the cost in hard-disk space is well worth the benefit of enhanced Windows performance. Unlike a temporary swap file, a permanent swap file does not change size as the free disk space on the hard disk decreases. The user cannot place a permanent swap file on a drive that has been compressed using a disk-compression utility. *See also swap file and temporary swap file.*

**permanent threshold shift (PTS)**

A permanent lessening of an individual's ability to hear. An irreversible reduction in sen-

sitivity to stimuli in one or more sensory modes due to any condition.

**permanent variance**

A variance from OSHA compliance granted for an indefinite period of time. A permanent variance will be issued only if and when OSHA determines that the workplace is as safe and healthful as it would be had the employer complied with the subject standard.

**permanently installed decorative fountains and reflection pools**

Those that are constructed in the ground, on the ground, or in a building in such a manner that the pools cannot be readily disassembled for storage and are served by electrical circuits of any nature. These units are primarily constructed for their aesthetic value and are not intended for swimming or wading.

**permanently installed swimming, wading, and therapeutic pools**

Those that are constructed in the ground, on the ground, or in a building in such a manner that the pool cannot be readily disassembled for storage, whether or not served by electrical circuits of any nature.

**permeability**

The ability of a liquid or gas to pass through; in this case, defined as the ability of a rock formation to transmit water.

**permeability index ( $i_m$ )**

A unit for describing the efficiency of fabrics in transferring moisture and associated latent heat away from the body. Numerically equal to the ratio between actual evaporative heat transfer of a clothing system to the ideal evaporative heat transfer of a wet-bulb system.

**permeable**

Refers to a substance or barrier that affords passage or penetration despite the absence of any damage (tear, rip) in the barrier.

**permeation**

Movement, on a molecular level, of a substance through a barrier.

**permeation rate**

The rate at which a chemical substance moves through a material, such as gloves, clothing, etc.

**permissible dose**

*Radiation.* The amount of radiation that may be received by an individual within a specified period with expectation of no harmful effects.

**permissible exposure limit (PEL)**

An OSHA-mandated value that represents the level of air concentrations of chemical substances to which it is believed that workers may be exposed on a daily basis without suffering adverse effects. PELs are enforceable by law under the Occupational Safety and Health Act of 1970. *See also Threshold Limit Value.*

**permissible exposure limit-ceiling (PEL-C)**

Under OSHA-established criteria, the concentration of a substance to which a worker may be exposed that at no time shall be exceeded.

**permissible exposure limit-short-term exposure limit (PEL-STEL)**

Under OSHA criteria, a fifteen-minute time weighted average concentration of a substance which must not be exceeded in the workday.

**permissible exposure limit-time-weighted average (PEL-TWA)**

Under OSHA criteria, an 8-hour time-weighted average concentration of a substance which must not be exceeded in the 8-hour work shift.

**permit**

An authorization, license, or equivalent control document issued by an authority having jurisdiction, such as the EPA or an approved state agency, to implement the requirements of an environmental regulation. For example, a permit to operate as a wastewater treatment plant or to operate a facility that may generate harmful emissions.

**permit line**

An imaginary line, or plane, approximately parallel to a riverbank, or shore, shoreward of which any marine structure may be erected without the authority of a formal federal navigation permit. Established by act of Congress. Also called *harbor line*.

**permit required confined space (PRCS)**

An enclosed space that is large enough and so configured that a person can enter it and perform work. This space requires written

authorization prior to entry and usually has one or more of the following characteristics: (1) it contains or has a known potential to contain a hazardous atmosphere; (2) it contains a material that has the potential for engulfing an entrant; (3) its internal configuration presents a trapping or asphyxiating hazard; (4) it contains other recognized serious safety or health hazards. *See also confined space-permit required.*

**permit shield**

Under the Clean Air Act, a provision that will allow protection against enforcement actions for operating without a permit for existing sources that submit completed applications in a timely manner.

**permit system**

The employer's written procedure for preparing and issuing permits for entry and for returning the permit space to service following termination of entry.

**permutation**

Any of the possible combinations or changes in position within a group.

**perseveration**

A movement disorder characterized by repeated motions after the task which required the motions has been completed.

**persistence forecast**

A forecast that the future weather condition will be the same as the present condition.

**person**

(1) *OSHA.* With regard to OSHA compliance, an individual, partnership, association, corporation, business trust, legal representative, and organized group of individuals, or agency, authority, or instrumentality of the United States or of a state. (2) *Clean Water Act.* Any individual, corporation, partnership, association, state, municipality, commission, political subdivision or interstate body. (3) *RCRA.* An individual, trust, firm, joint stock company, federal agency, corporation, partnership, association, state, municipality, political subdivision of a state, or an interstate body.

**person miles of travel (PMT)**

A measure of person travel. When one person travels one mile, one person mile of travel results. Where 2 or more persons travel to-

gether in the same vehicle, each person makes the same number of person miles as the vehicle miles. Therefore, four persons traveling 5 miles in the same vehicle, make 4 times 5 or 20 person miles.

**person trip**

A person trip is a trip by one or more persons in any mode of transportation. Each person is considered as making one person trip. For example, four persons traveling together in one auto make four person trips.

**personal allowance**

The provision of time during the workday for the employee to take care of personal needs. Same as *personal time*.

**personal casualties (boarding and alighting vehicle)**

A non-collision incident boarding or alighting a transit agency vehicle (slips, falls, door closings, lifts) in which one or more persons are injured or die. A boarding or alighting incident must involve physical contact between the passenger and the vehicle.

**personal casualties (in stations/bus stops)**

(1) A non-collision incident (involving stairs, escalators, elevators, passageways, platforms) at a station or bus stop in which one or more persons are injured or die. (2) An incident in which a person is hurt while using a transit facility. This includes anyone on transit property (e.g., patrons, employees, trespassers) but does not include incidents resulting from illness or criminal activity.

**personal casualties (inside vehicle)**

A non-collision incident (sudden braking, unexpected swerving) in which one or more persons within the transit vehicle are injured or die.

**personal casualty associated with escalator**

An incident in which a person is hurt while using an escalator in a transit facility. Any incident in this category is included in *personal casualty in stations/bus stops*.

**personal casualty associated with lifts**

An incident in which a person is hurt while using a lift to get on or off a transit vehicle.

**personal casualty entering/exiting a vehicle**

An incident in which a person is hurt while getting on or off a transit vehicle (e.g., falls or door incidents).

**personal casualty on vehicle**

An incident in which a person is injured on a transit vehicle, but not as a result of a collision, derailment/left roadway, or fire.

**personal consumption expenditure (PCE)**

As used in the national accounts, the market value of purchases of goods and services by individuals and nonprofit institutions and the value of food, clothing, housing, and financial services by them as income in kind. It includes the rental value of owner-occupied houses but excludes purchase of dwellings, which are classified as capital goods (investment).

**personal decontamination**

The removal of biological, chemical, or radioactive material from the body of clothing by appropriate mechanical and/or chemical means.

**personal eyewash**

A supplementary eyewash that supports plumbed units, self-contained units, or both by delivering immediate flushing of the eyes for less than 15 minutes.

**personal flotation device (PFD)**

A lifesaving device approved by the Commandant of the U.S. Coast Guard under 46 CFR 160 (i.e., life jackets).

**personal flying**

(1) Any use of an aircraft for personal purposes not associated with a business or profession, and not for hire. This includes maintenance of pilot proficiency. (2) Flying by individuals in their own or rented aircraft for pleasure, or personal transportation not in furtherance of their occupation or company business. This category includes practice flying (for the purpose of increasing or maintaining proficiency) not performed under supervision of an accredited instructor, and not part of an approved flight training program.

**personal leave**

That period of time which an individual may be gone from work without penalty and which is separate from vacation time, holidays, and sick leave.

**personal liability**

A kind of responsibility for the payment or performance of an obligation which exposes

the personal assets of the responsible person to payment of the obligation.

**personal monitoring**

(1) *Radiation*. The determination, using standard survey meters, of the degree of radioactive contamination on individuals, and the determination, using dosimetry devices, of dosages received. (2) *Industrial Hygiene*. The practice of having an individual wear monitoring or sampling devices during their workday to measure exposures to various hazardous substances or agents.

**personal protective equipment (PPE)**

Any of a number of devices or types of equipment (hard-hats, gloves, goggles, etc.) worn to provide protection against various hazards.

**personal sample**

A sample taken in the breathing zone or other area of a person (i.e., at the ear, body, etc.) to determine the potential for an adverse health effect on the individual as the result of exposure to an airborne contaminant, physical agent, etc.

**personal space**

A region surrounding an individual, the size of which he/she prefers to regulate.

**personal time**

See *personal allowance*.

**personal watercraft**

Craft less than 13 feet in length designed to be operated by a person or persons sitting, standing, or kneeling on the craft rather than within confines of a hull.

**personnel audit**

An aspect of organizational analysis involving a comprehensive examination of all personnel functions, including selection, training, retention, and needs.

**personnel monitoring device**

Device designed to be worn or carried by an individual for the purpose of measuring the dose of radiation received, or the amount of physical agent or airborne contaminant to which a person is exposed.

**personnel selection**

The process which includes some or all of the following steps: a) performing job/task analysis; b) selecting, administering, and

validating one or more tests to give to candidates; c) evaluating candidate performance on the test(s); and d) deciding which candidates to hire.

**persons otherwise assisted**

Number of persons on an assisted unit who benefited directly from the assistance rendered by the Coast Guard.

**perspective**

The compensation of relative positions in space for a model displayed on a CRT.

**perspiration**

(1) The excretion of moisture through the pores of the skin. (2) The salty fluid, consisting largely of water, excreted by the sweat glands in the skin. See also *sweat*.

**PERT**

See *Program Evaluation and Review Technique*.

**perverse verdict**

A verdict whereby the jury refuses to follow the direction of the judge on a point of law.

**pest**

Any insect, rodent, nematode, fungus, weed, or any other form of terrestrial or aquatic plant or animal life or virus, bacteria, or other microorganism (except viruses, bacteria, or other microorganisms on or in living man or other living animals) which the EPA Administrator declares to be a pest under the Federal Insecticide, Fungicide, and Rodenticide Act, Title 7 (Environmental Pesticide Control).

**pesticide**

Any substance or mixture of substances intended to prevent, destroy, repel, or mitigate pests. Any substance or mixture of substances intended for use as a plant regulator, defoliant, or desiccant.

**pesticide chemical**

Any substance which, alone, in chemical combination or in formulation with one or more other substances, is "a pesticide" within the meaning of the Federal Insecticide, Fungicide, and Rodenticide Act (Title 7) as now in force or as hereafter amended, and which is used in the production, storage, or transportation of raw agricultural commodities.

**PET**

See *project evaluation tree*.

**petit mal**

A relatively mild epileptic attack occurring in children, contrasting with grand mal, a major attack. In petit mal, the affected person loses consciousness only momentarily. Often the only outward signs of the attack are twitching of the eyes and mouth and a brief lapse of attention. The facial expression is blank and empty.

**petrochemical**

An organic compound, such as gasoline, kerosene, or petroleum, that has been obtained from petroleum or natural gas.

**petroleum**

(1) Crude oil, condensate, gasoline, natural gasoline, natural gas liquids, and liquefied petroleum gas. (2) A generic term applied to oil and oil products in all forms, such as crude oil, lease condensate, unfinished oils, petroleum products, natural gas plant liquids, and nonhydrocarbon compounds blended into finished petroleum products.

**petroleum coke**

A residue that is the final product of the condensation process in cracking. This product is reported as marketable coke or catalyst coke. The conversion factor is 5 barrels per short ton.

**petroleum consumption**

(1) The sum of all refined petroleum products supplied. For each refined petroleum product, the amount supplied is calculated by adding production and imports, then subtracting changes in primary stocks (net withdrawals are a plus quantity and net additions are a minus quantity) and exports. (2) A calculated demand for petroleum products obtained by summing domestic production, imports of crude petroleum and natural gas liquids, imports of petroleum products, and the primary stocks at the beginning of the period and then subtracting the exports and the primary stocks at the end of the period.

**petroleum exports**

Shipments of petroleum products from the 50 States and the District of Columbia to foreign countries, Puerto Rico, the Virgin Islands, and other U.S. possessions and territories.

**petroleum imports**

(1) Imports of petroleum into the 50 States and the District of Columbia from foreign

countries and from Puerto Rico, the Virgin Islands, and other U.S. territories and possessions. Included are imports for the Strategic Petroleum Reserve and withdrawals from bonded warehouses for onshore consumption, offshore bunker use, and military use. Excluded are receipts of foreign petroleum into bonded warehouses and into U.S. territories and U.S. Foreign Trade Zones. (2) All imports of crude petroleum, natural gas liquids, and petroleum products from foreign countries and receipts from Guam, Puerto Rico, the Virgin Islands, and the Hawaiian Trade Zone. The commodities included are crude oil, unfinished oils, plant condensate, and refined petroleum products.

**petroleum inventories**

The amounts of crude oil, unfinished oil, petroleum products, and natural gas liquids held at refineries, at natural gas processing plants, in pipelines, at bulk terminals operated by refining and pipeline companies, and at independent bulk terminals. Crude oil held in storage on leases is also included.

**petroleum product**

(1) Flammable, toxic, or corrosive products obtained from distilling and processing of crude oil, unfinished oils, natural gas liquids, blend stocks, and other miscellaneous hydrocarbon compounds. (2) Petroleum products are obtained from the processing of crude oil (including lease condensate), natural gas, and other hydrocarbon compounds. Petroleum products include unfinished oils, liquefied petroleum gases, pentanes plus, aviation gasoline, motor gasoline, naphtha-type jet fuel, kerosene-type jet fuel, kerosene, distillate fuel oil, residual fuel oil, petrochemical feedstocks, special naphthas, lubricants, waxes, petroleum coke, asphalt, road oil, still gas, and miscellaneous products.

**petroleum refinery**

An installation that manufactures finished petroleum products from crude oil, unfinished oils, natural gas liquids, other hydrocarbons, and alcohol.

**petty offense**

A minor crime, the maximum punishment for which is generally a fine or short term in jail or house of correction. In some states, it is a classification in addition to a misdemeanor and felony.



**PF**

See *protection factor*.

**PFC**

See *passenger facility charge*.

**PFD**

See *personal floatation device*. See also *primary flight display*.

**PFT**

See *pulmonary function test*.

**pg**

Picogram.

**pH**

A measure of the acidity or alkalinity of a liquid or solid material. The negative logarithm of the hydrogen ion concentration  $[H^+]$ . A measure of the degree to which a substance is acidic or basic. The pH values are indicated on a scale of 1-14, with those above the neutral 7 considered "basic" and those below 7 considered "acidic."

**PHA**

See *preliminary hazard analysis*. See also *process hazard analysis*.

**phagocyte**

A cell that engulfs and destroys foreign particles or microorganisms by digestion. Fixed phagocytes are potentially phagocytic, and free phagocytes are intensely phagocytic.

**phagocytosis**

The envelopment and digestion of bacteria and other foreign bodies by phagocytes.

**phalanx**

Any of the bones in the fingers or toes. Plural is *phalanges*.

**phantom limb**

The kinesthetic sensations which amputees occasionally experience and cause them to believe they still have the amputated member.

**pharmacokinetics**

The study of the action of a substance on the body over a period of time, including the processes of absorption, distribution, localization in tissues, biotransformation, and excretion.

**pharyngitis**

Inflammation of the pharynx. Acute pharyngitis usually appears suddenly and runs its course in a few days or a week. Symptoms,

more severe in children, are dry, sore throat, fatigue, and mild fever. Often, swallowing is painful, the head aches, and there is a harsh cough and a persistent desire to clear the throat. The throat frequently becomes swollen and covered with a thick mucous material. Sometimes there is pain in the ears, or hoarseness. Chronic pharyngitis is the result of continuous reinfection or chronic irritation of exposed parts of the throat. It is similar to acute pharyngitis, but less severe. The simple catarrhal form can be caused by smoking, dust, smog, or constant breathing through the mouth.

**pharynx**

A tube-like structure, about 5 inches long, which extends from the posterior nasal cavity to the esophagus and larynx. The pharynx includes many individual structures and may be divided into three areas: the nasopharynx (top), oropharynx (center, behind the mouth), and laryngopharynx (bottom). The nasopharynx, connected with the nasal cavities, provides a passage for air during breathing. It also contains the openings of the eustachian tubes through which air enters the middle ear. The oropharynx and laryngopharynx provide passageways for both air and food. The pharynx also functions as a resonating organ in speech.

**phase**

(1) A temporal or physical subset of a project which is in existence for some portion of the total time. (2) That fraction of a complete period through which a periodic entity has passed, relative to some origin or reference point. Expressed in angular terms, with a complete period being  $360^\circ$  or  $2\pi$  radians. (3)

In physical chemistry, a component that is homogeneous of itself, bounded by an interface, and mechanically separable from other phases of the system.

**phase angle**

The difference in phase between two periodic waveforms.

**phase contrast microscope**

An optical microscopic technique for determining the concentration of fibers in an air sample. The method cannot distinguish the types of fibers that are present. This technique enables the microscope to transfer dif-

ferences in the phases of light waves into intensity variations which increase specimen contrast, thereby enabling one to see a specimen that would otherwise be essentially invisible by light field microscopic techniques.

### **phase of operation**

*Aviation (NTSB).* The phase of the flight or operation is the particular phase of flight in which the first occurrence or circumstance occurred. In the event that there was more than one occurrence in one operational phase, the same phase is recorded for each of those occurrences.

### **phase shift**

That change in time, either advancing or delaying, of a periodic waveform from a known or standard position to a new position, usually represented by an angle in sinusoidal waveforms.

### **phenols**

(1) Organic compounds containing one or more hydroxyl groups attached to an aromatic or carbon ring that are byproducts of petroleum refining, tanning, and textile, dye, and resin manufacturing. Low concentrations cause taste and odor problems in water; higher concentrations can kill aquatic life and humans. (2) An extremely poisonous antiseptic, germicide, and disinfectant.

### **phenomenal zero**

That physical level or intensity of some stimulus along a given dimension at which an individual judges it to be nonexistent or have no value.

### **philtrum**

The vertical depression which extends from the base of the nasal septum to the superior margin of the upper lip.

### **philtrum length**

The vertical linear distance from the superior margin of the upper lip to the base of the nasal septum. Measured with the facial muscles relaxed.

### **PHL**

See [\*preliminary hazard list\*](#).

### **phlebitis**

Inflammation of a vein. It is relatively common, especially in the veins of the lower limbs. Phlebitis is not serious when the inflammation is located in a superficial vein

since these veins are numerous enough to permit the flow of blood to be rechanneled, so that the inflamed vein is bypassed. When a deep vein is involved, however, phlebitis is potentially more dangerous. It can also have serious consequences if it occurs in certain areas such as the veins of the cranium, where it may lead to cerebral abscesses. The causes of phlebitis are uncertain. The disease sometimes occurs for no apparent reason. At other times, it seems to follow a variety of other disorders — for example, circulatory difficulties, blood disorders, and obesity. Phlebitis may also be a complication of pneumonia, typhoid fever, or other general infections. It may result from an injury to a vein, an accident, or occasionally as an aftermath of surgery. When it occurs in a superficial vein, there is usually pain and tenderness. This may be so slight at first that the tenderness is felt only when pressure is applied to the painful area. As the inflammation increases, the pain becomes more acute, especially during walking or other exercise. The inflamed area swells and becomes red and warm. A tender cord-like mass may form under the skin; it may grow smaller as the condition subsides, but occasionally lasts for some time. When the inflammation occurs in a deep vein and affects the vein's inner lining, there may be formation of the thrombus on the vein wall. This condition is known as *thrombophlebitis*. When clots in the veins interfere with the normal flow of blood, fluid accumulates and causes edema.

### **phlegm**

Stringy, thick mucus secreted by the respiratory mucosa.

### **phon**

Unit of loudness level. A unit of subjective loudness that is based on decibel scale.

### **phonation**

The production of speech sounds using the vocal cords to interrupt air flow from the lungs.

### **phoneme**

The smallest unit or sound of speech which can have meaning or result in a change of meaning in a word.

**phonetic alphabet**

A standardized word list used to enhance voice communication over radio or telephone.

**phonetically balanced (PB)**

A type of test used in measuring speech intelligibility, in which a monosyllabic word list is used as a standard.

**phosphor**

A liquid or crystalline, organic, or inorganic substance that is capable of absorbing energy (e.g., X-rays, UV radiation, etc.) and emitting a portion of the energy in the visible, infrared, or ultraviolet region of the electromagnetic spectrum.

**phosphorescence**

The emission by a substance as a result of previous absorption of radiation of a shorter wavelength. In contrast to fluorescence, the emission may continue for a considerable time after cessation of the exciting radiation.

**phosphorus**

A chemical element, atomic number 15, atomic weight 30.974, symbol P. Phosphorus, in combination with calcium, oxygen, and hydrogen, forms the substance of bones. It also plays an important role in cell metabolism. It is obtained by the body from milk products, cereals, meat, and fish, and its use by the body is controlled by vitamin D and calcium. Phosphorus is very flammable and exceedingly poisonous. Inhalation of its vapors by workers in chemical industries may cause necrosis of the mandible. Free phosphorus causes fatty degeneration of the liver and other viscera.

**phot**

A unit of illumination with the centimeter as the unit of length rather than the meter. Equal to a one lumen flux on a one centimeter area.

**photo reconnaissance**

Military activity that requires locating individual photo targets and navigating to the targets at a preplanned angle and altitude. The activity normally requires a lateral route width of 16 nautical miles and altitude range of 1,500 feet to 10,000 feet above ground level (AGL).

**photoallergic**

Exposure to a chemical that is absorbed into the body and subsequently is activated by ultraviolet radiation with resulting effects of ir-

ritation or allergic contact dermatitis. An allergic reaction that is a heightened, delayed, contact-type sensitivity to light.

**photochemical oxidants**

Air pollutants, such as aldehydes, acids, and nitrates, formed by the action of sunlight on oxides of nitrogen and hydrocarbons.

**photochemical reaction**

The chemical changes that are induced as a result of the absorption of radiant energy (e.g., light) by various substances.

**photochemical smog**

Air pollution caused by chemical reactions in the atmosphere with various pollutants, including the oxides of nitrogen and hydrocarbons. *See also smog.*

**photochromatic interval**

A range of luminance between the absolute rod threshold and the cone color identification threshold within which no perception of color can be made.

**photochromic effect**

Exhibiting a color change on light exposure.

**photodissociation**

The splitting of a molecule by a photon. *See also photon and Plank's constant.*

**photoelectric effect**

A process by which radiation loses energy to matter. All the energy of a photon is absorbed in ejecting an electron from the material/substance and imparting kinetic energy to the electron.

**photogrammetry**

The use of photographs to track motion or determine center of mass (and/or) gravity of a body.

**photographic dosimetry**

*See film badge.*

**photoionization detector**

Photons of light energy from a UV lamp in an instrument are absorbed by some molecules/species and dissociation results, producing ions and electrons. The amount of dissociation that occurs is proportional to the contaminant concentration in the sampled air.

**photokeratitis**

Inflammation of the cornea as a result of exposure to ultraviolet light. A feeling of sand in the eyes. Often experienced by welders.

**photokeratoconjunctivitis**

An inflammation of the corneal conjunctiva from exposure to UV light.

**photolysis**

The decomposition of a compound as a result of the absorption of radiant energy. Also referred to as photochemical decomposition.

**photometer**

An instrument for measuring aspects of radiant energy in the visible portion of the electromagnetic spectrum, such as luminance, illuminance, luminous intensity, and luminous flux.

**photometric brightness**

See *luminance*.

**photometric unit**

A unit of measurement for radiant energy in relation to its effect on visual receptors.

**photometry**

Analytical method based on the determination of the relative radiant power of a beam of radiant energy, in the visible, infrared, or ultraviolet region of the electromagnetic spectrum, which has been attenuated as a result of its passing through a solution or gas-air mixture containing a material which can absorb the radiant energy. Also referred to as *colorimetry*.

**photomultiplier tube**

A vacuum tube capable of increasing (multiplying) the electron input to the tube.

**photon**

The quantum of energy emitted or absorbed in the form of electromagnetic radiation whose energy value is the product of its frequency and Planck's constant ( $E=h\nu$ ). It is a discrete quantity of energy that can be thought of as a packet of electromagnetic radiation traveling at the speed of light. See also *Planck's constant*.

**photonics**

The study and/or technology of generating, containing, transmitting, processing, detecting, and using light and other forms of electromagnetic energy whose basic unit of measure can be treated as a photon.

**photophobia**

Abnormal visual intolerance to light.

**photopic**

Pertaining to relatively high levels of illumination.

**photopic spectral luminous efficiency function ( $V(\lambda)$ )**

A mathematical representation or graph describing the relative sensitivity of the retina to wavelengths of light under moderate to high illumination.

**photopic vision**

That aspect of visual perception due to stimulation of normally functioning retinal cones under moderate to high illumination levels resulting in the sensation of color. Synonymous with *color vision* and *chromatic vision*.

**photoreceptor**

Any sensory mechanism or physical device which is capable of detecting radiation within and/or near the visible region of the electromagnetic spectrum.

**photosensitization**

Dermatitis due to exposure to a sensitizer followed by exposure to light, with resulting photocontact dermatitis. The development of abnormally heightened reactivity of the skin to sunlight.

**photosphere**

The visible surface of the sun from which most of its energy is emitted.

**photosynthesis**

The utilization of sunlight by plants as well as bacteria to convert two inorganic substances (carbon dioxide and water) into carbohydrates. This is an example of a photochemical reaction.

**phototoxic**

Erythema followed by hyperpigmentation of sun-exposed areas of the skin, resulting from exposure to agents containing photosensitizing substances, such as coal tar and some drugs, then to sunlight.

**phototropism**

(1) Tendency of an organism to turn or move toward (positive phototropism) or away from (negative phototropism) light. (2) Change of color produced in a substance by the action of light.

**PHS**

See *Public Health Service*.

**physiatrics**

The practice of physical or rehabilitation medicine.

**physiatrist**

One who practices physical medicine.

**physical**

Pertaining to nature or to the body.

**physical age**

See *chronological age*.

**physical anthropology**

A sub-discipline of anthropology which specializes in the study of human biological variation and evolution.

**physical basic element**

One of a set of basic elements of work characterized by the ASME as involving some form of physical activity.

**physical constant**

A physical quantity which does not vary in numerical value.

**physical containment**

A passive isolation, once established, involving solid structure between two substances which are to be kept separate. See also *operational containment*.

**physical deconditioning**

The loss of muscular, cardiovascular, or other body tone due to lack of physical activity, as might occur in extended periods of inactivity, bed rest, or microgravity.

**physical disability**

Any disability involving a structural or motor aspect.

**physical effort**

The use of biomechanics, physiology, and body structures in carrying out some function.

**physical examination**

Examination of the bodily state of a patient by ordinary physical means, as inspection, palpation, percussion, and auscultation.

**physical handicap**

A physical disability which requires the use of one or more physical devices to enable the individual to have a significant degree of independence and function in the normal environment.

**physical harm**

Physical impairment of the human body, or of land, or chattels.

**physical health**

A state in which one's bodily structure, strength, and joint motion capabilities are within normal limits. See also *health*.

**physical injury**

Bodily harm or hurt, excluding mental distress, fright, or emotional disturbance.

**physical medicine**

The use of electrotherapy and other physical techniques to effect the rehabilitation of injured patients.

**physical photometer**

An instrument which uses light sensitive transducers to measure luminance.

**physical therapist**

One who practices physical therapy.

**physical therapy**

The use of physical stimuli and/or exercise to treat injury or disease. This usually includes the use of heat, water, exercise, massage, and electric current. Physical therapy attempts to relieve pain and to improve or restore muscular function. Its ultimate goal is to train the disabled individual in the safest and most effective means of performing essential activities.

**physical work capacity (PWC)**

The maximum rate of oxygen consumption or rate of work output for an individual performing a very strenuous physical task, corresponding to a specified heart rate. The measured heart rate is often stated as a subscript, generally 150, 170, or 180 beats per minute, abbreviated as BPM.

**physical workload**

Any measure of the physical labor or effort involved in some activity.

**physician**

A practitioner of medicine. A person duly authorized or licensed to treat diseases. One lawfully engaged in the practice of medicine.

**physiological response**

Any of the body's reactions to an internal or external stimulus.



**physiological work measurement**

The application of work physiology techniques to determine the physiological task load/severity on the worker. Also referred to as *ergonomics* and *work measurement*.

**physiologically inert**

Having no functional or chemical effect on the body.

**physiology**

The science concerned with the normal vital processes of organisms, especially as to their normal functioning rather than to their anatomical structure.

**phytotoxic**

Something that harms plants.

**pi ( $\pi$ )**

A physical constant, equal to about 3.14159.

**pia meter**

A membrane lying adjacent to and closely following the contours of neural tissue in the brain and spinal cord.

**picketing**

Term refers to the presence at an employer's business by one or more employees and/or other persons to publicize a labor dispute, influence employees or customers to withhold their work or business, respectively, or show the union's desire to represent employees. Picketing is usually accompanied by patrolling with signs.

**pickup truck**

A motorized vehicle, privately owned and/or operated, with an enclosed cab that usually accommodates 2-3 passengers and an open cargo area in the rear. Pickup trucks usually have about the same wheel base as a full-size station wagon. Includes compact and full-size pickup trucks.

**pico-**

(*prefix*) One-trillionth or  $10^{-12}$  of the basic unit.

**picocurie (pCi)**

A measurement of radioactivity equal to one million-millionth (or trillionth) of a curie and represents about 2.2 radioactive particle disintegrations per minute.

**picogram**

One-trillionth of a gram.

**PID**

Photoionization detector.

**PIDP**

See *Programmable Indicator Data Processor*.

**pie chart**

A circular graphic which may be subdivided radially and used for representing proportions of a whole, by analogy with a pie.

**piece rate**

An incentive plan provides a constant monetary compensation per production unit completed. See also *wage rate*.

**pier**

The structure perpendicular to the shoreline to which a vessel is secured for the purpose of loading and unloading cargo. See also *dock*, *marina*, and *wharf*.

**piezoelectric**

A material that provides a polarization between mechanical and electric energy.

**piezoelectric effect**

A property exhibited by some dielectric crystals in which the application of a mechanical force results in polarization of electric charge; or inversely, the application of a voltage between some faces produces a mechanical deformation.

**piezoelectric touchscreen**

A display with an overlying glass pane separated from the display by a set of pressure-sensitive crystals which are capable of locating the touch point.

**pig**

(1) *Radiation*. A container, typically constructed of lead, that is used to ship or store a radioactive material. (2) *Petroleum Industry*. A jointed metal device which can be forced through a pipeline by hydraulic pressure to scrape off rust and scale or to mark the interface between two products being transferred through the pipe line. (3) *Transit (slang)*. A trailer transported on flat car.

**piggyback**

(1) A transportation concept whereby truck trailers are hauled on railroad flatcars. (2) The transportation of highway trailers or removable trailer bodies on rail cars specifically equipped for the service. It is essentially a joint carrier movement in which the motor



carrier forms a pickup and delivery operation to a rail terminal, as well as a delivery operation at the terminating rail head. *See also intermodal.*



*In piggyback operations, fully loaded containers can be transported by rail to a predetermined location and then transferred to trucks for final delivery to the desired destination*

### **piggyback trailers**

Trailers which are designed for quick loading on railcars.

### **pigtail**

*Transit (slang).* A cable used to transmit electrical power to a trailer.

### **pike pole**

*Maritime Navigation.* A long pole with a hook on one end used for pulling in a line or wire that is out of reach. It may also be painted with red and white markings to denote a scale of measuring water depth or barge draft. *See also sounding pole.*

### **pileus cloud**

A smooth cloud in the form of a cap. Occurs above, or is attached to, the top of a cumuli-form cloud. Sometimes called a *cap cloud*.

### **pilferage**

The act of broaching and stealing part or all of the content of cargo.

### **piling**

A set of posts forced into the earth to serve as a support, as for a pier, or to resist lateral pressure.

### **piling area**

An area identified as a danger to maritime navigation containing one or more structures consisting of piles (long heavy timbers or sections of steel, concrete, etc. forced into the earth to serve as a support, as for a pier).

### **pilot**

(1) *Aviation.* One who is trained to operate an aircraft. (2) *Maritime.* The helmsman on a riverboat. Also one who, though not belonging to a ship's company, is licensed to guide a vessel into and out of a port or through dangerous waters. (3) To maneuver or control a vehicle which is not normally limited to motion on a relatively hard, fixed surface.

### **pilot briefing**

A service provided by a Flight Service Station (FSS) or International Flight Service Station (IFSS) to assist pilots in flight planning. Briefing items may include weather information, Notice to Airmen (NOTAM), military activities, flow control information, and other items as requested.

### **pilot deviation**

The actions of a pilot that result in the violation of a Federal Aviation Regulation or a North American Aerospace Defense Command (NORAD) Air Defense Identification Zone (ADIZ) tolerance.

### **pilot in command**

The pilot responsible for the operation and safety of an aircraft during flight time.

### **pilot study**

A preliminary, small research effort undertaken prior to a full research experiment. May be to gather preliminary data, test procedures, or some other function.

### **pilot waters**

Areas in which the services of a marine pilot are essential.

### **pilot weather report**

A report of meteorological phenomena encountered by aircraft in flight.

### **pilotage**

Navigation by visual reference to landmarks.

### **pilot's automatic telephone weather answering service**

A continuous telephone recording containing current and forecast weather information for pilots.

### **pilot's discretion**

When used in conjunction with altitude assignments, means that Air Traffic Control (ATC) has offered the pilot the option of starting a climb or descent whenever he/she wishes and conducting the climb or descent at

any rate he wishes. He/she may temporarily level off at any intermediate altitude. However, once he/she has vacated an altitude, he/she may not return to that altitude.

**pin-up**

*Transit (slang).* To hook a tractor to a semi-trailer.

**pinch**

To bring two structures together and apply pressure to an object between them.

**pinch grasp**

A position in which the thumb pad and the anterior-lateral side of the index finger are together with the intent to generate forces adequate to hold some relatively thin object between them.

**pinch point**

Any location where it is possible to be caught between a) moving parts of a machine, b) moving and stationary parts of a machine, or c) material and parts of a machine.

**pineal gland**

A small, cone-shaped structure, attached to the midline of the upper brainstem, which is the source of the hormone melatonin, and is believed to be involved in physical development and biological rhythms.

**pink noise**

Noise whose noise-power per unit frequency is inversely proportional to frequency over a specified range. Noise that decreases with increasing frequency, to yield constant energy per octave band.

**pinkeye**

*See conjunctivitis.*

**pinna**

*See auricle.*

**pinnacle**

A tall, slender, spire-shaped rock projecting from a level or gently sloping surface.

**pipe**

A tube, usually cylindrical, through which a hazardous liquid or carbon dioxide flows from one point to another.

**pipe lagging**

The insulation or wrapping around pipe.

**pipeline**

(1) Discharge line from a hydraulic dredge. (2) All parts of an onshore pipeline facility through which oil moves including, but not limited to, line pipe, valves, and other appurtenances connected to line pipe, pumping units, fabricated assemblies associated with pumping units, metering and delivery stations and fabricated assemblies therein, and breakout tanks. (3) All parts of a pipeline facility through which a hazardous liquid or carbon dioxide moves including, but not limited to, line pipe, valves, and other appurtenances connected to line pipe, pumping units, fabricated assemblies associated with pumping units, metering and delivery stations and fabricated assemblies therein, and breakout tanks. (4) A continuous pipe conduit, complete with such equipment as valves, compressor stations, communications systems, and meters for transporting natural and/or supplemental gas from one point to another, usually from a point in or beyond the producing field or processing plant to another pipeline or to points of utilization. Also refers to a company operating such facilities. (5) A closed conduit, with pumps, valves, and control devices, for conveying fluids, gases, or finely divided solids.

**pipeline facility**

New and existing piping, rights-of-way, and any equipment, facility, or building used in the transportation of gas, hazardous liquids, or carbon dioxide, or in the treatment of gas during the course of transportation.

**pipeline fuel**

Gas consumed in the operation of pipelines, primarily in compressors.

**pipelines except natural gas**

Includes establishments engaged in the pipeline transportation of petroleum and other commodities, except natural gas. Also included are coal and slurry pipeline operations.

**pipet**

(1) A heavy-walled glass tube of small bore, with a slightly beveled end, used to draw up by suction small quantities of liquid. (2) To draw into and discharge from a pipet.

**pipng**

Pipe, tubing, hoses, fittings, valves, pumps, connections, safety devices, or related com-

ponents for containing the flow of hazardous fluids.

**piroque**

A boat or canoe made from a hollowed tree trunk.

**pistol grip**

That structure on a tool or other device which resembles the grasping structure on a pistol, is used for holding the tool/device during carrying or operation, and may have a trigger-like mechanism for operation.

**pitch**

(1) *Acoustics*. The attribute of auditory sensation in terms of which sounds may be ordered on a scale extending from low to high. Pitch depends primarily on the frequency of the sound stimulus, but also on the sound pressure and wave form of the sound. (2) *Ladders*. The included angle between the horizontal and the ladder, measured on the opposite side of the ladder from the climbing side.

**pitch and bark pocket**

An opening extending parallel to the annual growth rings in a tree containing, or that has contained, pitch, either solid or liquid. A *bark pocket* is an opening between annual growth rings that contains bark.

**pitch discrimination**

The ability to distinguish frequency differences in pure sounds.

**pitch setting**

The propeller blade setting as determined by the blade angle measured in a manner, and at a radius specified by the instruction manual for the propeller.

**pitot traverse**

A series of measurements at predetermined positions across a section of ductwork or piping, employing a pitot tube for determining total, static, and velocity pressures for subsequent use in determining air velocity in the duct/pipe and the amount of air passing the point at which the pitot traverse was made.

**pitot tube**

A device used to measure pressures in an air-stream or ventilation system. It consists of two concentric tubes arranged such that one

measures total or impact pressure, and the other measures static pressure. The difference in pressure indicated on the U-tube connected between the total pressure and static pressure tubes represents the velocity pressure at the position in the duct.

**pits**

Floor drains which may be used to discharge hazardous wastes; also called trenches.

**pituitary gland**

The master gland of the endocrine system, so called because it controls hormone production of other endocrine glands. This pea-sized gland lies in a small recess (the sella turcica) at the base of the brain and is connected to the hypothalamus by the hypophyseal (pituitary) stalk. The hypothalamus controls many of the secretory functions of the pituitary hormones. Information concerned with the well-being of an individual and gathered by the nervous system is transmitted to the hypothalamus which then regulates the secretion of pituitary hormones. The activities of the nervous system and the endocrine system are thereby correlated.

**pivot joint**

A joint in which motion is limited to rotation about an axis perpendicular to the contact surface.

**pivot point**

An approximation of the center of rotation for various types of hinge joints.

**pixels**

The dots that form the picture on a CRT screen.

**placarded car**

A rail car which is placarded in accordance with the requirements of 49 CFR 172 except those cars displaying only the FUMIGATION placards as required by 49 CFR 172.510.

**placards**

With regard to vehicles transporting hazardous materials: DOT-required signs that are affixed to the front, rear, and sides of all vehicles transporting hazardous materials and hazardous wastes. These signs must meet DOT specifications for size, color and location on the vehicle and must be used according to predesigned hazard classification

criteria based on the weight or volume of the particular materials being transported.

**place of employment**

Within the safe place statutes, a place where active work, either temporary or permanent, is being conducted in connection with a business for profit. That is, where some process or operation related to such industry, trade, or business is carried on and where any person is directly or indirectly employed by another.

**place-holding cursor**

A cursor which indicates the location of the last entry or at which the next text or other data entry will occur.

**placebo**

(1) A null treatment given to a control group. (2) An inactive substance resembling a medication that may be given experimentally or for its psychological effects.

**PLAID**

See *Panel Layout And Integrated Design*.

**plain**

A region of generally uniform slope, comparatively level, and of considerable extent.

**plain view doctrine**

(1) *General Law*. In search and seizure context, objects falling in plain view of an officer who has the right to be in a position to have that view are subject to seizure without a warrant and may be introduced in evidence. (2) *General Compliance*. Allows for the citation of employers for violative conditions that are visible to someone (including an OSHA compliance officer) who is observing from a public place.

**plaintiff**

The party commencing a claim in civil litigation. In a criminal prosecution, such a party is the Prosecution or the State.

**plan**

A therblig which consists of the cognitive/mental process of determining what action must be taken next.

**Planckian locus**

See *blackbody locus*.

**Planckian radiator**

See *blackbody*.

**plane**

(1) A flat surface. (2) A specified level, as the plane of anesthesia.

**plane angle**

A figure composed, in the simplest sense, of two different rays having a common endpoint. By definition, these rays will always lie in a single plane. The basic unit of measure for a plane angle is the *radian*. 1.0 radian is the plane angle formed when the tip, or end, of a rotating vector (the generator) of unit length, moving in a plane, has traveled a circular path of length equal to the length of the unit vector. Plane angles are dimensionless quantities, since they are defined as length/length. Clearly, by this definition, there will be a total of 2 radians in one complete circle. In most Systems of Units, plane angles are measured in radians and also frequently in degrees. Note that a plane angle of 360 degrees (written 360) = 2 radians, or 1.0 radian = 57.296. See also *length*.

**plane wave**

A waveform composed of parallel planes perpendicular to the direction of propagation in which all points in a given plane are at the same phase.

**planetary scale**

The largest scale of atmospheric motion. Sometimes called the *global scale*.

**planimeter**

A device used for determining the area of a planar surface by determining and working with the area boundary.

**Plank's constant**

A natural constant ( $\nu$ ) of proportionality ( $h$ ) relating the frequency of a quantum of energy to the total energy of the quantum, expressed as  $h = E/\nu = 6.6 \times 10^{-27}$  erg-s.

**planning process**

The foundation of a successful accident investigation and loss control program. A detailed and highly comprehensive effort to prepare for the investigation of all possible or potential accident events which could likely occur during the daily operation of a given business enterprise.

**plant**

(1) Any member of the plant kingdom, including seeds, roots, or other parts thereof.

(2) Interchangeable term often used to describe a factory or manufacturing facility.

**plant layout**

The arrangement of the physical facilities, machinery, and equipment within a given production/manufacturing location.

**plant regulator**

Any substance or mixture of substances intended, through physiological action, for accelerating or retarding the rate of growth or rate of maturation, or for otherwise altering the behavior of plants or the produce thereof, but shall not include substances to the extent that they are intended as plant nutrients, trace elements, nutritional chemicals, plant inoculants, and soil amendments. Also, the term "plant regulator" shall not be required to include any of such of those nutrient mixtures or soil amendments as are commonly known as vitamin-hormone horticultural products, intended for improvement, maintenance, survival, health, and propagation of plants, and as are not for pest destruction and are nontoxic, nonpoisonous in the undiluted packaged concentration.

**plantar**

Pertaining to the sole of the foot.

**plantar flexion**

A rotation about the ankle joint which results in a relative downward motion of the anterior portion of the foot. Also referred to as *plantarflexion*.

**plantar flexor**

Any muscle which depresses the anterior foot about the ankle joint. Synonymous with *plantarflexor*.

**plaque**

A patch or flat area.

**plasma**

(1) *Medical*. The fluid (non-cellular portion) of the circulating blood, as distinguished from the *serum* obtained after coagulation. (2) *Astronomy*. An outflow of charged particles from the sun that escapes the sun's outer atmosphere at high speed. Commonly referred to as *solar wind*.

**plastic**

(1) Tending to build up tissue. (2) Capable of being molded. (3) A substance produced by chemical condensation or by polymerization.

**plastic surgery**

Surgery performed to improve the appearance or function of exposed parts of the body that are defective, deformed, or damaged.

**plate tectonics**

The theory that the earth's surface down to approximately 100 kilometers is divided into a number of plates that move relative to one another across the surface of the earth. Once referred to as *continental drift*. When one of two tectonic plates that are in contact with each other begins to move, the resultant release of energy is experienced on the surface as an *earthquake*.

**platelet**

Disk-shaped structures found in the blood of all mammals and chiefly known for their role in blood coagulation. Blood platelets (also called thrombocytes) are non-nucleated blood elements with a very fragile membrane. They tend to adhere to uneven or damaged surfaces. They average about 250,000 per cubic millimeter of blood and are principally concerned with coagulation of blood and the contraction of a blood clot. They are formed in red bone marrow and the rate of their formation seems to be governed by the amount of oxygen in the blood and the presence of nucleic acid derivatives from injured tissue.

**platform**

(1) An extended step or landing, or a landing breaking a continuous run of stairs. (2) A working space for persons, elevated above the surrounding floor or ground; such as a balcony or platform for the operation of machinery and equipment.

**platform area**

An area identified as a danger to maritime navigation containing one or more platforms (horizontal surfaces raised above the level of the surrounding area for the purpose of supporting equipment used in the drilling).

**platform body**

A truck or trailer body with a floor, but no sides or roof.

**platform ladder**

A self-supporting ladder of fixed size with a platform provided at the working level. The size is determined by the distance along the front rail from the platform to the base of the ladder.

**platinum**

A chemical element, atomic number 78, atomic weight 195.09, symbol Pt.

**platybasia**

Malformation of the base of the skull, with upward displacement of the upper cervical vertebrae and bony impingement on the brain stem. It is accompanied by neurologic signs referable to the medulla oblongata, cervical spinal cord, and cranial nerves.

**platykurtic**

Pertaining to a normal distribution that is more flattened than peaked.

**play**

Any free movement of components.

**playa**

The Spanish word for beach, a word used primarily in the southwestern United States to describe a dry, vegetation-free, flat area at the lowest part of an undrained desert basin, underlain by stratified clay, silt, or sand, and commonly by soluble salts. They are occasionally covered by shallow lakes in the wettest parts of the year.

**PLC**

See *packaged laboratory chemical*.

**pleadings**

The statements that set forth, to the court, the claims of OSHA (the plaintiff) and the answers of the employer (the defendant).

**Pleistocene epoch**

The most recent period of extensive continental glaciation that saw large portions of North America and Europe covered with ice. It began about 2 million years ago and ended approximately 10,000 years ago. More commonly referred to as the *Ice Age*.

**plenum**

Air compartment connected to a duct or ducts. It is a low-velocity air chamber used to distribute static pressure throughout its interior.

**plenum velocity**

The air velocity within a plenum.

**plethysmograph**

An instrument used to detect changes in the volume of some body part.

**pleura**

A thin membrane surrounding the lungs and lining the internal surface of the chest cavity.

The pleura reduces the friction of the movements of the lungs, chest, etc. during respiration.

**pleural plaques**

Plaques observed in the pleura of some of the persons who have been exposed to asbestos.

**pleurisy**

Irritation and pain of the outer lung lining and the chest cavity's inner lining.

**Plimsoll mark**

A marking placed on the side of a ship denoting the maximum depth to which it may be loaded or ballasted.

**PLM**

See *polarized light microscopy*. See also *private label merchandiser*.

**plosive**

Pertaining to a sound produced by turbulent air flow when the oral tract is opened to release pressure.

**plumbism**

A chronic poisoning of humans caused by the absorption of lead or lead salts.

**plume**

(1) A visible or measurable discharge of a contaminant from a given point of origin. Can be visible or thermal in water, or visible in the air. (2) The area of measurable and potentially harmful radiation leaking from a damaged reactor. (3) The distance from a toxic release considered dangerous for those exposed to the leaking fumes.

**plutonium**

A radioactive metallic element similar chemically to uranium.

**ply rating**

A measure of the strength of tires based on the strength of a single ply of designated construction. A 12-ply rating does not necessarily mean that 12 plies are present, only that the tire has the strength of 12 standard plies.

**PM**

(1) See *particulate matter*. (2) See *preventive maintenance*.

**PM 10**

Particulate matter with an aerodynamic diameter less than or equal to 10 micrometers.



**P.M. peak period**

*Federal Transit Association.* The period in the afternoon or evening when additional services are provided to handle higher passenger volumes. The period begins when normal headways are reduced and ends when headways are returned to normal. *See also A.M. peak period.*

**PMN**

*See premanufacture notification.*

**PMT**

*See passenger-miles traveled. See also person miles of travel.*

**PMTS**

*See predetermined motion time system.*

**PNAs**

Polynuclear aromatic compounds. *See also polynuclear aromatic hydrocarbons.*

**pneumatic**

Operated by air pressure.

**pneumoconiosis**

Inflammation often leading to fibrosis of the lungs and caused by the inhalation of dust associated with various occupations (e.g., mining). The disease is characterized by permanent deposition of substantial amounts of particulate matter in the lungs, usually of occupational or environmental origin, and by tissue reaction to its presence. It may be a relatively harmless form, such as siderosis, to a serious form, such as silicosis. Symptoms can include chest pains, cough, cyanosis, and fatigue.

**pneumoconiosis-producing dust**

Dust which, when inhaled, deposited, and retained in the lungs, produces signs, symptoms, and findings of pulmonary disease.

**pneumonia**

Acute inflammation or infection of the lung. Pneumonia once was a common cause of death and killed one out of four victims. It is still a serious disease, especially in infants and the elderly, who are most vulnerable. Infectious pneumonia may be caused by either bacteria or viruses. It may be primary or secondary (a complication of another disease) and may involve one or both lungs. It is most frequently caused by the pneumococcus. The microorganisms that give rise to pneumonia are always present in the upper respiratory

tract. They cause no harm unless resistance is severely lowered by some other factor, such as a severe cold, disease, alcoholism, or general poor health. Age is also a factor. When resistance is lowered or the conditions are favorable, the pneumococci invade the lungs.

**pneumonitis**

Inflammation of the lungs.

**pneumotachograph**

An instrument used to record the breathing/pulmonary ventilation rate.

**pneumothorax**

An accumulation of air or gas in the pleural cavity, resulting in collapse of the lung on the affected side. The condition may occur spontaneously, as in the course of a pulmonary disease, or it may follow trauma to, and perforation of, the chest wall.

**PNOC**

Particulates not otherwise classified.

**PNS**

*See peripheral nervous system.*

**pocket dosimeter**

A direct reading portable unit, usually shaped like a pen with a pocket clip, generally used to measure exposures to gamma- and x-radiation.

**podiatrist**

A specialist in treating the feet for minor ailments, such as corns, bunions, calluses, and fungal infections. Podiatrists are not graduate physicians, and their treatments should be confined to minor foot conditions. Such treatments may include minor surgical procedures and prescriptions of corrective shoes or special exercises.

**point**

(1) To move a cursor on a display to a certain item using a direct manipulation computer input device. (2) A measure of type size (1 point is 1/72 in.). (3) An output measure in the Bedaux system consisting of that production by one standard operator in one minute's time. (4) To extend a finger (usually the index finger) at an object to draw attention to that object.

**point and click**

A method of operation with a graphical user interface in which a mouse or other computer

input device is used to drag a pointing cursor, often an arrow, to a certain display location and execute a command by clicking when the cursor overlies a certain block or region.

**point biserial  $r$  ( $r_{pb}$ )**

The correlation coefficient between a continuous variable and a dichotomous variable.

**point detector**

*Rail Operations.* A circuit controller which is part of the switch operating mechanism and operated by a rod connected to a switch, derail, or movable point frog to indicate that the point is within a specified distance of the stock rail.

**point holding**

*Aviation.* A specified location, identified by visual or other means, in the vicinity of which the position of an aircraft in flight is maintained in accordance with air traffic control clearances.

**point of fixation**

See *fixation point*.

**point of inflection**

See *inflection point*.

**point of observation**

The midpoint of an imaginary line connecting the pupil centers of the two eyes.

**point of operation**

The zone in which the primary functional parts of a machine or tools perform their function(s). With regard to machine guarding, it is the point of operation that must properly guarded.

**point-of-rent**

Area on a terminal facility which is assigned for the receipt of inbound cargo from the ship and from which inbound cargo may be delivered to the consignee, and that area which is assigned for the receipt of outbound cargo from shippers for vessel loading.

**point of subjective equality (PSE)**

The value of some variable or stimulus in psychophysical work at which the observer cannot tell a difference between a reference value and the variable value.

**point source**

(1) *General.* An energy source whose dimensions, relative to its distance from the point of

observation, are significant for practical purposes in any calculations. For visual work, anything less than about 10' of arc is considered a point source. (2) *Environmental Pollution.* A stationary location or fixed facility from which pollutants are discharged or emitted. Also, any single identifiable source of pollution such as a pipe, ditch, ship, ore pit, factory smokestack, etc.

**point source detector**

Single-point detection device that responds to a contaminant as it is transported by air currents from a source to the detector location.

**point source discharges**

Any discernible, confined and discrete conveyance including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feed operation, vessel or other floating craft from which pollutants are or may be discharged into waters.

**pointer**

A highlighting technique which uses some directional device or indicator to locate that portion of a display toward which attention is desired or required.

**pointing cursor**

A position-indicating cursor which shows the user's relative location among display structures.

**pointmark**

A specific point of interest on a body landmark.

**pointway channel**

A cutoff channel which lies across the point of a bend and usually leads deep into another bend. Conversely, *bendway channel*.

**poise**

The unit of viscosity of a liquid, defined as the force in dynes required to move a surface one square centimeter in area past a parallel surface at a speed of one centimeter per second, with the surfaces separated by a fluid film one centimeter thick. The commonly used unit is the *centipoise*, which is one one-hundredth of a poise.

**poison**

Any substance that, when administered to a living organism, causes a harmful effect. Most substances are harmful at some dose and

may be harmless at very low doses. Corrosives are poisons that destroy tissues directly. They include the mineral acids, such as nitric acid, sulfuric acid, and hydrochloric acid; the caustic alkalis, such as ammonia, sodium hydroxide (lye), sodium carbonate, and sodium hypochlorite; and carbolic acid (phenol). Irritants are poisons that inflame the mucous membranes by direct action. These include arsenic, copper sulfate, salts of lead, zinc, and phosphorus, and many others. Nerve toxins act on the nerves or affect some of the basic cell processes. This large group includes the narcotics, such as opium, heroin, and cocaine, and the barbiturates, anesthetics, and alcohols. Blood toxins act on the blood and deprive it of oxygen. They include carbon monoxide, carbon dioxide, hydrocyanic acid, and the gases used in chemical warfare. Some blood toxins destroy the blood cells or the platelets.

#### **poison gas in bulk**

The transportation, as cargo, of any poison gas in any quantity.

#### **poisoning**

The morbid condition produced by a poison. The symptoms of poisoning vary greatly according to the poison taken and the time that has elapsed. Some poisons cause no immediate symptoms. In general, poisoning should be suspected in the following instances: a) a revealing odor such as alcohol on the breath; b) discoloration of the mouth or lips; c) evidence of eating leaves or wild berries; d) severe pain or a burning sensation in the mouth and throat; e) nausea or vomiting; f) convulsions; g) confusion or disturbance of sight; h) unconsciousness or deep sleep; i) sudden illness; or j) an open bottle or container of medication or poisonous chemicals is found nearby.

#### **Poisson distribution**

A discrete distribution having a probability distribution function of

$$p(n) \cong \frac{m^n e^{-m}}{n!}$$

where:

$p(n)$  = probability of  $n$  in  $N$   
 $m$  =  $Np$  = mean = variance  
 $n$  = the number of occurrences desired  
 $N$  = the number of possible occurrences

#### **polar compound**

Descriptive of a molecule in which the positive and negative electrical charges are permanently separated, as opposed to nonpolar molecules in which the charges coincide. Polar molecules ionize in solution and impart electrical conductivity. Examples of polar compounds are alcohol, water, sulfuric acid, etc.

#### **polar easterlies**

A shallow body of easterly winds located at high latitudes poleward of the subpolar low.

#### **polar front**

A semipermanent, semicontinuous front that separates tropical air masses from polar air masses.

#### **polar front jet stream**

The jet stream that is associated with the polar front in middle and high latitudes. It is usually located at altitudes between 9 and 12 kilometers.

#### **polar front theory**

A theory developed by a group of Scandinavian meteorologists that explains the formation, development, and overall life history of cyclonic storms that form along the polar front.

#### **polar orbiting satellite**

A satellite whose orbit closely parallels the earth's meridian lines and thus crosses the polar regions on each orbit. This is an excellent vantage point for observing and studying a great portion of the earth's surface without having to continuously adjust the satellite's attitude and position. For the military this is an exceptional advantage since, in the Northern Hemisphere, a satellite orbiting over the north pole would have an excellent view of the United States, Asia (China), and the Commonwealth of Independent States (the former Soviet Union) all from the same orbit.

#### **polar solvent**

Solvents which contain oxygen.

#### **polar track structure**

*Aviation.* A system of organized routes between Iceland and Alaska which overlie Canadian airspace.

#### **polarize**

To orient light waves in a specific plane.

**polarized light**

Light waves whose vibrations occur in one direction only.

**polarized light microscopy (PLM)**

An optical microscopic technique to distinguish different types of fibrous materials by their unique optical properties when exposed to polarized light.

**polarography**

An analytical method, based on the electrolysis of a sample solution, for determining the amount of specific contaminants, which are electro-reducible or electro-oxidizable.

**pole trailer**

A motor vehicle without motive power designed to be drawn by another motor vehicle and attached to the towing vehicle by means of a reach or pole, or by being boomed or otherwise secured to the towing vehicle, for transporting long or irregularly shaped loads such as poles, pipes, or structural members capable generally of sustaining themselves as beams between the supporting connections.

**police power**

The legal authority of the states to enact legislation and implement programs to protect the public health, safety, welfare, and morals. The police power is a reserved power of the states not given to the federal government in the Constitution. The analogous authority of the federal government (with a very different legal foundation) is *commerce power* to regulate interstate commerce and prevent the states putting undue burdens on interstate commerce.

**policy allowance**

A non-bonus time allowance added to the standard time to maintain or provide a satisfactory earning level under unusual circumstances.

**poliomyelitis**

A contagious viral disease that attacks the central nervous system, injuring or destroying the nerve cells that control the muscles and sometimes causing paralysis. Paralysis most often affects the legs but can involve any muscles, including those that control breathing and swallowing. Since development and use of vaccines against poliomyelitis, the dis-

ease has become far less common. Usually referred to simply as *polio* and, at one time, *infantile paralysis*.

**pollen**

(1) A fine, powder-like dust material produced by plants. (2) The fertilizing element of flowering plants. (3) A natural or background air pollutant.



*Pollen is released as part of the natural life cycle of most plants*

**pollutant**

(1) Generally, any substance introduced into the environment that adversely affects the usefulness of a resource. (2) Any element, substance, compound, or mixture, including disease-causing agents, which after release into the environment and upon exposure, ingestion, inhalation, or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains, will or may reasonably be anticipated to cause death, disease, behavioral abnormalities, cancer, genetic mutation, physiological malfunctions (including malfunctions in reproduction) or physical deformations, in such organisms or their offspring.

**pollutant standard index (PSI)**

Measure of adverse health effects of air pollution levels in major cities.

**pollution**

Generally, the presence of matter or energy whose nature, location, or quantity produces undesirable effects. Under the Clean Water Act, for example, the term is defined as the manmade or man-induced alteration of the physical, biological, and radiological integrity of water.

**polychlorinated biphenyl (PCB)**

A group of highly toxic, persistent chemicals used in transformers and capacitors for insu-

lating purposes and in gas pipeline systems as a lubricant. Further sale of new use PCBs was banned by law in 1979.

### **polycythemia**

A condition marked by an excess of red blood cells in the blood (i.e., an abnormal increase in the erythrocyte count or in hemoglobin concentration). There are two distinct forms of the disease. In *primary polycythemia* (also called polycythemia vera), the cause for the red cell increase is not understood. There is hyperplasia of the cell-forming tissues of the bone marrow, with resultant elevation of the erythrocyte count and hemoglobin level, and an increase in the number of leukocytes and platelets. The condition has been compared to leukemia and regarded as a malignant neoplastic disease. *Secondary polycythemia* is a physiologic condition resulting from a decreased oxygen supply to the tissue. The body attempts to compensate for the oxygen deficiency by manufacturing more hemoglobin and red blood cells. Living at high altitudes can produce polycythemia, as can severe chronic lung and heart disorders, especially congenital heart defects. Symptoms of both types of polycythemia are much the same. The increased erythrocyte production results in thickening of the blood and an increased tendency toward clotting. The viscosity of the blood limits its ability to flow properly, diminishing the supply of blood to the brain and to other vital tissues. This may cause mental sluggishness, irritability, headache, dizziness, fainting, disturbances of sensation in the hands and feet, and a feeling of fullness in the head. There may be episodes of acute pain as spontaneous clots occur in the blood vessels. The spleen becomes enlarged. The smaller veins become prominent, so that the skin has a bluish tint. The secondary form is often accompanied by enlargement of the tips of the fingers (clubbing).

### **polydisperse aerosol**

An aerosol with a geometric standard deviation greater than one. As the geometric standard deviation increases, the aerosol becomes more polydisperse.

### **polyelectrolytes**

Synthetic chemicals that help solids to clump during sewage treatment.

### **polyethylene**

A synthetic plastic material formed by polymerization of ethylene.

### **polygraph**

A multi-channel chart recorder for recording several physiological measures simultaneously.

### **polymer**

A high-molecular-weight material formed by the joining together of many simple molecules (monomers). There may be hundreds or even thousands of the original molecules linked end to end and others cross-linked. Rubber and cellulose are naturally occurring polymers. Most resins are chemically produced polymers. *See also* [polymerization](#).

### **polymer fume fever**

An occupational disease, characterized by chills, dry cough, and tightness of the chest, as a result of exposure to the breakdown products (due to heating) of fluorocarbons such as polytetrafluoroethylene.

### **polymerization**

A chemical reaction in which a high-molecular-weight material is reduced by the addition to or condensation of a simpler compound, for example, the production of polystyrene from styrene.

### **polynuclear aromatic compounds**

*See* [polynuclear aromatic hydrocarbons](#).

### **polynuclear aromatic hydrocarbon (PAH)**

Aromatic compounds containing 3 or more closed rings, usually of the benzene type. Also referred to as *PNAs*.

### **polyp**

A growth extending outward from a mucous membrane. Polyps may be attached to a membrane by a thin stalk, in which case they are known as pedunculated polyps, or may have a broad base (sessile polyps). They are usually an overgrowth of normal tissue, but sometimes polyps are true tumors (i.e., masses of new tissue separate from the supporting membrane). Usually benign, they may lead to complications or eventually become malignant. Polyps may occur wherever there is mucous membrane: in the nose, ears, mouth, lungs, heart, stomach, intestines, urinary bladder, uterus, and cervix.

**polyvinyl chloride (PVC)**

A tough, environmentally indestructible plastic that releases hydrochloric acid when burned.

**pons**

(1) That part of the hind brain lying above the medulla oblongata and below the mid-brain or mesencephalon, with the cerebellum and middle part of the fourth ventricle constituting the metencephalon. (2) A slip of tissue connecting two parts of an organ.

**Pontiac fever**

A short febrile illness without pneumonia and characterized by headache, chills, cough, tiredness, muscle pain, and nausea. It is caused by Legionella bacteria.

**pool**

That area of a river impounded behind a dam. A pool may extend for many miles between one dam and the next. *See also field area.*

**pool boat**

A towboat with the pilothouse built on the forward end of the cabin rather than on top of the roof. So called because this type is used in areas where low bridges dictate low superstructure.

**pool line**

Normal pool water line along the bank.

**pool river**

A river comprised of various pools or revels formed by dams and having generally a minimum of current, in contrast to an open river where currents often become fierce.

**pool site**

One or more spent fuel storage pools that has a single cask loading area. Each dry cask storage area is considered a separate site.

**pool stage**

The stage of water that is maintained between two successive dams and is usually the minimum depth that can be maintained and yet have the project depth in the channel.

**poor condition classification**

Major repairs or modifications are required to make the facility operational or to prevent failure. Facility is only partially operational, and is not adequately serving the purpose for which it was constructed.

**pop rise**

A fast rise (usually not a great one) in the river generally caused by a flash flood.

**pop-up menu**

A menu which is displayed overlaying other screen entities, generally in the center of the screen, following an appropriate keystroke, mouse click, or other form of operator input and which remains displayed until a selection is made or the menu is closed or exited.

**popliteal**

Pertaining to the tendons, fossa, and other tissues posterior to the knee.

**popliteal crease**

The junction of the biceps femoris and gastrocnemius muscles or their tendons posterior to the knee when the knee is flexed about 90°.

**popliteal crease clearance, horizontal**

The horizontal linear distance between the most anterior part of the seat pan and the popliteal crease. Measured with the individual sitting erect, the knee flexed about 90°, and the feet flat on the floor or other reference surface.

**popliteal fossa**

The natural depression in the posterior portion of the leg at the knee.

**popliteal height**

The vertical distance from the footrest surface to the biceps femoris tendon at the underside of the thigh immediately behind the popliteal crease. Measured with the individual sitting upright with the knee flexed 90°.

**popliteus**

A flat skeletal muscle underlying the distal portion of the popliteal fossa.

**population**

(1) A group of interbreeding organisms of the same kind occupying a particular space. Generically, the number of humans or other living creatures in a designated area. (2) The total group of individual persons, objects, or items from which samples may be taken to estimate characteristics of that population by statistical methods.

**population parameter**

In epidemiology, the true parameters that are determined by including the entire population in an epidemiology study.



**population stereotype**

A common behavioral expectation in a perceptual-motor situation.

**population stock**

A group of animals of the same species or smaller taxa in a common spatial arrangement that interbreed when mature.

**porphyrin**

Any of a group of iron-free or magnesium-free cyclic tetrapyrrole derivatives which occur universally in protoplasm. Protoporphyrin (zinc protoporphyrin is a test in determining inorganic lead absorption) is among them.

**port**

(1) A harbor area in which are located marine terminal facilities for transferring cargo between ships and land transportation. (2) A harbor with piers or docks. (3) The left side of a ship when facing forward. (3) An opening in a ship's side for handling freight.

**port authority**

(1) An entity of a state or local government that owns, operates, or otherwise provides wharf, dock and other marine terminal investments at ports. (2) Body established by law to have specified powers including the right to act with respect to a defined area of responsibility. Often used to apply to any quasi-autonomous or quasi-independent agency which has adequate authority over an effective management of a port.

**port marks**

An identifying set of letters, numbers, and/or geometric symbols followed by the name of the port of destination, placed on export shipments. Foreign government requirements may be exceedingly strict in the matter of port marks.

**port of call**

Port where a ship discharges or receives traffic.

**port of entry**

A port at which foreign goods are admitted into the receiving country.

**port tariff**

A set of rules and regulations governing a port, along with the published fees and charges for using a port's facilities.

**portable**

With regard to instruments, a self-contained, battery-operated instrument that weighs less than 10 pounds and can be carried and used by an individual.

**portable direct-reading instrument**

A portable instrument that can measure the concentration of gases, vapors, or other contaminants, or the level of physical stress (i.e., noise, ionizing radiation, etc.) directly (i.e., provides an instantaneous readout at the test site).

**portable lighting**

Any type of lighting designed to be easily transported manually from one location to another.

**portable organic vapor analyzer**

An instrument used to screen volatile organic compounds.

**portable tank**

A bulk packaging (except a cylinder having a water capacity of 1000 pounds or less) designed primarily to be loaded onto, or on, or temporarily attached to a transport vehicle or ship and equipped with skids, mountings, or accessories to facilitate handling of the tank by mechanical means. It does not include a cargo tank, tank car, multi-unit tank car tank, or trailer carrying 3AX, 3AAX, or 3T cylinders.

**portable x-ray**

X-ray equipment designed to be hand carried.

**portage**

An overland passage connecting two bodies of water.

**portal of entry**

Avenue (e.g., via inhalation, skin absorption, ingestion, injection, etc.) by which an agent (e.g., parasite, chemical, etc.) enters the body. Also referred to more commonly as the *route of entry*.

**Porton reticle**

A transparent grid that is mounted in the eyepiece of a microscope at the exact focal plane of the specimen and is thus superimposed on the field being viewed, thereby facilitating the sizing of particles collected on a filter or other collecting media.

**position**

Placing an object in a predetermined location for future use/operations.

**Position Analysis Questionnaire (PAQ)**

A structured questionnaire used in an attempt to quantify job descriptions based on a set of job elements.

**position control**

A type of control mechanism in which a displacement of an input device leads to a proportional displacement of an output device. Also called *zero-order control*. See also *rate control*.

**position index**

A factor for the relative average luminance of a source located within the visual field which produces a sensation at the comfort-discomfort boundary.

**position report**

A report over a known location as transmitted by an aircraft to Air Traffic Control (ATC).

**position sensitivity**

With instrumentation, the effect on an instrument's response due to deviations in attitude from the normal operating position.

**position symbol**

A computer-generated symbol shown on a radar display to indicate the mode of tracking.

**positioning movement**

Relocating one or more body segments relative to other object(s) or a reference point.

**positive afterimage**

That color image of an object which continues to be seen after ceasing to look at the object.

**positive click**

The incorporation of momentary stops with an audible click or tactile sensation in such motions as turning a dial or pushing a button to provide sensorimotor feedback to the operator.

**positive control**

*Aviation.* (1) Control of all air traffic, within designated airspace, by air traffic control. (2) The separation of all air traffic within designated airspace by air traffic control.

**positive data**

Analytical results for which measurable concentrations (i.e., above a quantitation limit) are reported. May have data qualifiers attached.

**positive feedback**

A signal which tends to enhance or prolong the output of a system.

**positive feedback mechanism**

See *feedback mechanism*.

**positive g**

An acceleration vector directed inferior along the body longitudinal axis, usually referring to a magnitude greater than that of normal earth gravity, as in an aircraft maneuver which results in blood pooling in the lower extremities. See also *negative g*.

**positive incentives**

The approach to compliance in which the organization establishes voluntary compliance programs to police themselves or even turn themselves into prosecutors. The organization strives to adopt what the government regards as the best, most reasonable, and effective means of self-regulation as appropriate to the industry. Some government agencies have set standards for corporate conduct within the regulated area in order to compose a list of companies whose programs and policies are sufficient to earn a higher level of trust. Such companies may then receive preferential treatment by such agencies. See also *carrot and stick approach* and *environmental leadership program*.

**positive pressure**

Condition that exists when more air is supplied to a space than is exhausted so the air pressure within that space is greater than that in surrounding areas.

**positive-pressure breathing apparatus**

A self-contained breathing apparatus in which the pressure in the breathing zone is positive in relation to the immediate environment during inhalation and exhalation.

**positive-pressure respirator**

A respiratory protective device in which the air pressure inside the respirator air inlet is positive in relation to the air pressure of the outside atmosphere during exhalation and inhalation.

**positive reinforcement**

The cause of strengthening or increasing the frequency of a response as a result of contingent reinforcement.

**positive skew**

Having a distribution curve with the mean greater than the mode.

**positive transfer**

A condition in which an individual's previous experience aids learning of a new task.

**positive vorticity advection (PVA)**

A region of positive vorticity usually several hundred kilometers wide on an upper-level weather chart that moves with the general wind flow. It aids in weather prediction by showing where regions of rising air, clouds, and storms are likely to form.

**positive work**

The application of a force through some vertical distance in opposing gravity.

**positron**

Particle equal in mass but opposite in charge to the electron. Also referred to a *positive electron*.

**possum**

*Maritime Navigation.* Colloquial term for a portable fender or hand fender used to prevent damage to lock walls or vessels when mooring. Should always be used wet. *See also bumpers.*

**possum belly**

*Transit (slang).* Livestock trailer with a drop frame to haul small animals (chickens, etc.) underneath heavy cattle.

**post**

(1) An upright piece of timber or other material, in or adjacent to a body, used for mooring ships or supporting other structures. (2) A long, relatively slender and generally round piece of wood or other material.

**post-closure**

The time period following the shutdown of a waste management or manufacturing facility. For monitoring purposes, this is often considered to be thirty years.

**post-rotary nystagmus**

That nystagmus caused by deceleration of the vestibular system as head rotation is stopped.

**posterior**

Referring to a location behind or toward the back of the body.

**posterior cricoarytenoid**

A skeletal muscle in the larynx which causes the glottis to open on contraction.

**posterior neck length**

The surface distance from nuchale to cervicale. Measured with the individual standing erect, the head, neck, and shoulder muscles relaxed.

**post-flight earblock**

The pressure differential generated due to the absorption of oxygen by tissues within the middle ear after breathing pure oxygen on a high-altitude flight.

**postprandial**

Following a meal.

**postural movement**

Any bodily movement resulting from the neuromuscular coordination of the postural muscles and nervous system to maintain or attempt to maintain postural stability.

**postural muscles**

Those muscles normally involved in maintaining an erect posture, usually the slow muscles of the legs, back, and abdomen.

**postural sway**

Any non-volitional pendulum-type movements of the head, trunk, or entire body which occur while standing or sitting at rest. Also called *postural tremor*.

**posture**

(1) A set of anatomical coordinate frames at various body points whose origins are defined quantitatively relative to a comprehensive three-dimensional coordinate system. (2) A qualitative description of the general position of the body (i.e., standing, sitting).

**potable water**

(1) *General.* Water that is safe for drinking and cooking. (2) *OSHA.* Water which meets the quality standards prescribed in the U.S. Public Health Service Drinking Water Standards, or water which is approved for drinking water purposes by the state or local authority having jurisdiction.

**potency**

The ability of a contaminant or physical agent to produce an adverse health effect.

**potential biological removal level**

According to the Federal Marine Mammal Protection Act of 1972: The maximum number of animals, not including natural mortalities, that may be removed from a

marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population. The potential biological removal level is the product of the following factors: a) the minimum population estimate of the stock, one-half the maximum theoretical or estimated net productivity rate of the stock at a small population size; b) and a recovery factor of between 0.1 and 1.0.

**potential energy**

The energy that a body possesses by virtue of its position with respect to other bodies in the field of gravity.

**potential evapotranspiration (PE)**

That amount of moisture that, if it were available, would be removed from a given land area by evaporation and transpiration.

**potential for improving performance**

The value of the ratio of outputs of a master performer to an average performer.

**potential hazard**

A situation which possesses characteristics conducive to the occurrence of an exposure to a hazardous agent, physical stress, ergonomic stressor, or other hazard.

**potential temperature**

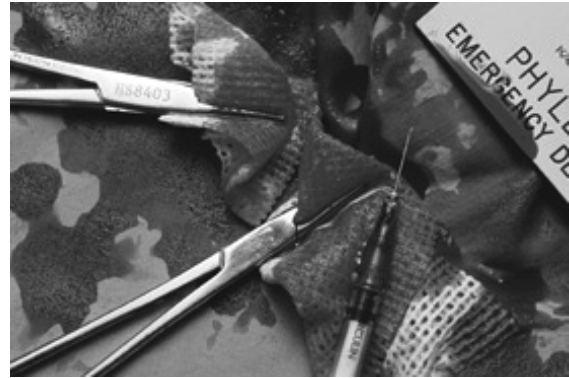
The temperature that a parcel of dry air would have if it were brought dry adiabatically from its original position of 1000 mb.

**potential to emit**

Calculated using the major stationary source's maximum design capacity following application of pollution controls.

**potentially infectious medical waste**

Under the United States Public Vessel Medical Waste Anti-Dumping Act of 1988: Includes isolation wastes, infectious agents, human blood and blood products, pathological wastes, sharps, body parts, contaminated bedding, surgical wastes, and other disposable medical equipment and material that may pose a risk to the public health, welfare, or the marine environment.



*Infectious medical waste must be strictly controlled*

**potentially responsible party (PRP)**

Under the Federal Comprehensive Environmental Response, Compensation and Liabilities Act (CERCLA), any individual or company, including owners, operators, transporters or generators, potentially responsible for, or contributing to the contamination problems at a Superfund site. Whenever possible, the EPA requires PRPs, through administrative and legal actions, to cleanup waste sites they have contaminated.

**potentiation**

An increased toxicologic effect by one agent or another resulting in a combined effect that is greater than the simple sum of those of the individual agents.

**potentiator**

A chemical that has little adverse effect itself; however, when given or received in conjunction with another chemical, it enhances the effect of that chemical.

**potentiometer**

A continuously variable electrical resistor.

**pots**

Flares placed on highway to warn traffic of an obstruction or hazard.

**potter's asthma**

Asthmatic symptoms associated with the pneumoconiosis observed among workers in the ceramic industry.

**Pott's disease**

Tuberculous spondylitis, usually beginning as a tuberculous osteomyelitis of the vertebrae and progressing to damage of the intervertebral disks. If erosion continues unchecked, there is complete destruction of the affected vertebrae. Symptoms include stiffness of the

back, pain on motion, prominence of the spinous process of certain vertebrae and occasionally abscess formation, paralysis, and abdominal pain.

**POTW**

See *publicly owned treatment works*.

**pound force**

A unit of force in the English system.

**pound mass**

A unit of mass in the English System

**pound mole**

The amount of a substance, in pounds, that is equivalent to the molecular weight of the substance. For example, a pound mole of sodium hydroxide is equal to 40 pounds.

**power**

(1) The statistical probability of rejecting a hypothesis when it is not true. Equal to  $1 - \beta$ , where  $\beta$  = the probability of making a type II error. (2) The rate at which work is performed or energy transferred with respect to time.

**power and control tray cable**

A factory assembly of two or more insulated conductors, with or without associated bare or covered grounding conductors under a non-metallic sheath, approved for installation in cable trays, in raceways, or where supported by a messenger wire.

**power brake**

Open throttle while applying brakes.

**power density**

The rate of energy transported into a small sphere divided by the cross-sectional area of that sphere. It is expressed in units of watts per meter squared ( $W/m^2$ ), or more commonly as milliwatts per square centimeter (expressed as  $mW/cm^2$ ). See also *power spectral density*.

**power function**

Any relationship in which one variable is described by a constant multiplied by another variable raised to some exponent (e.g.,  $A = kB^n$ ).

**power fuse**

See *fuse*.

**power grip**

A type of grip in which the fingers and palm are partially flexed around an object, with an opposing thumb crotch.

**power level**

In acoustics, ten times the logarithm to the base 10 of the ratio of a given power to a reference power. The reference power is typically taken as 1 E-12 watts.

**power-limited tray cable**

A factory assembly of two or more insulated conductor under a nonmetallic jacket.

**power of attorney**

An instrument in writing whereby one person, as principal, appoints another as his/her agent and confers authority to perform certain specified acts or kinds of acts on behalf of the principal. An instrument authorizing another to act as one's agent or attorney. The agent is "attorney in fact" and his/her power is revoked on the death of the principal by operation of the law. Such power may be either general (full) or special (limited).

**power-operated switch**

A switch operated by an electrically, hydraulically, or pneumatically driven switch-and-lock movement.

**power outlet**

An enclosed assembly which may include receptacles, circuit breakers, fuse holders, fused switches, buses, and watt-hour meter mounting means. Intended to supply and control power to mobile homes, recreational vehicles or boats, or to serve as a means for distributing power required to operate mobile or temporarily installed equipment.

**power spectral density**

The mean square value of that portion of the energy within a narrow frequency band of a power spectrum. Also known as *autospectral density*, *spectrum level*, and *power density*.

**power takeoff**

A device usually mounted on the side of the transmission or transfer case, or off the front of the crankshaft, and used to transmit engine power to auxiliary equipment such as pumps, winches, etc.

**power train**

The group of components used to transmit engine power to the wheels. The power train

includes the engine, clutch, transmission universal joints, drive shafts, and rear axle gears.

**power units**

The control and pulling vehicle for trailers or semitrailers.

**powered-air purifying respirator (PAPR)**

A respiratory protective device that has air under pressure provided to the wearer by a fan/pump after it has been cleaned by drawing it through a filter or chemical cartridge.

**powered axle**

An axle equipped with a traction device.

**powered industrial truck**

A material handling device powered by some means (electricity, liquefied petroleum gas, diesel fuel, gasoline, etc.) used primarily to move, locate, place, and/or retrieve palletized or otherwise contained materials and stock that are too heavy for manual handling. Industrial trucks may also be used for other special purposes, as designated by the responsible manufacturer.



*The forklift or fork truck, a common powered industrial truck*

**ppb**

Parts per billion (1 ppb = 0.001 ppm). Used to express tiny concentrations of pollutants in air, water, soil, human tissue, food, or other products.

**ppbv**

Parts per billion by volume.

**ppcf**

Particles per cubic foot.

**PPE**

See *personal protective equipment*.

**ppm**

Parts per million (1 ppm = 0.0001% or 1000 ppb). Used to express tiny concentrations of pollutants in air, water, soil, human tissue, food, or other products.

**ppm-hr**

Part per million-hours.

**ppmv**

Parts per million by volume.

**ppt**

Parts per trillion.

**pptv**

Parts per trillion by volume.

**practice**

The repetition of some activity in an attempt to become more proficient in that activity.

**practice effect**

That improvement in performance observed over time due to learning prior to that point at which an individual achieves stable and/or asymptotic performance.

**PRCS**

See *permit required confined space*.

**PRE**

See *progressive resistance exercises*.

**preamble**

The introductory information published with any new standard which provides great detail on the development of the final rule as well as explains the intent of the regulatory agency (such as OSHA) in promulgating the rule. It carries no force of law.

**preamplifier**

An electrical device for amplifying very low amplitude electrical signals prior to input to a standard amplifier.

**prearranged coordination**

*Aviation.* A standardized procedure which permits an air traffic controller to enter the airspace assigned to another air traffic con-



troller without verbal coordination. The procedures are defined in a facility directive which ensures standard separation between aircraft.

**preassigned probability**

When the likelihood of all possible outcomes of a given event is known or can be determined, the probability of such outcomes is said to be preassigned (rolling dice, tossing a coin, etc.).

**preauricular point**

That location anterior to the opening of the external auditory canal representing the most posterior aspect of the zygomatic arch.

**precarious right**

The right which the owner of a thing transfers to another, to enjoy the same until it shall please the owner to revoke it.

**precautions**

(1) Any action taken to reduce the probability of an accident. (2) Measures taken to reduce the likelihood for an excessive exposure to a health hazard.

**precautionary evacuation**

According to the Federal Atomic Energy Act of 1954: An evacuation of the public within a specified area near a nuclear facility, or the transportation route in the case of an accident involving transportation of source material, special nuclear material, byproduct material, high-level radioactive waste, spent nuclear fuel, or transuranic waste to or from a production or utilization facility if the evacuation is (1) the result of any event that is not classified as a nuclear incident but that poses imminent danger of bodily injury or property damage from the radiological properties of source material, special nuclear material, byproduct material, high-level radioactive waste, spent nuclear fuel, or transuranic waste, and causes an evacuation; and (2) initiated by an official of the state or political subdivision of a state, who is authorized by state law to initiate such an evacuation and who reasonably determined that such an evacuation was necessary to protect the public health and safety.

**precedent**

An adjudged case or decision of a court, considered as furnishing an example or authority for an identical or similar case afterward arising or a similar question of law. Courts attempt to decide cases on the basis of principles established in prior cases. Hence, prior cases which are close in facts or legal principles to the case under consideration are called precedents.

**precipitate**

A collection or deposit of solid particles that have settled out of solution.

**precipitation**

(1) *Meteorology.* All forms of water particles, liquid or solid, that fall from the atmosphere and reach the earth. (2) *Waste Treatment.* Removal of solids from liquid waste so that the hazardous solid portion can be disposed of safely; removal of particles from airborne emissions.

**precipitation-evaporation index**

An index that gives the long-range effectiveness of precipitation in promoting plant growth. Also referred to as the *P/E index*.

**precipitation ratio**

An expression devised for the purpose of classifying climates; based on monthly totals of precipitation and evaporation. Also referred to as *P/E ratio*.

**precipitators**

Air pollution control devices that collect particles from an emission.

**precision**

The agreement among repeated measurements of the same parameter under the same conditions.

**precision approach procedure**

A standard instrument approach procedure in which an electronic glide slope is provided, such as instrument landing system (ILS) and precision approach radar (PAR).

**precision approach radar (PAR)**

Radar equipment in some Air Traffic Control (ATC) facilities operated by the Federal Aviation Administration (FAA) and/or the military services at joint-use civil/military locations and separate military installations to detect and display azimuth, elevation, and

range of aircraft on the final approach course to a runway. This equipment may be used to monitor certain non-radar approaches, but is primarily used to conduct a precision instrument approach wherein the controller issues guidance instructions to the pilot based on the aircraft's position in relation to the final approach course (azimuth), the glide path (elevation), and the distance (range) from the touchdown point on the runway as displayed on the radar scope. *See also airport surveillance radar and ground controlled approach.*

**precision grip**

That type of grip utilizing only the more distal phalanges of the hand, and which is intended for optimum control rather than strength.

**precision instrument runway**

A runway with an existing or planned precision instrument approach procedure.

**precision runway monitor**

Provides air traffic controllers with high precision secondary surveillance data for aircraft on final approach to closely spaced parallel runways. High-resolution color monitoring displays are required to present surveillance track data to controllers along with detailed maps depicting approaches and no transgression zone.

**precursor**

In photochemical terminology, a compound such as a volatile organic compound (VOC) that "recedes" an oxidant. Precursors react in sunlight to form ozone or other photochemical oxidants.

**predetermined motion time system (PMTS)**

Any of a number of work measurement techniques which use some combination of the following practices and synthesize the times required to perform a job or task: a) a methodology for determining the basic human motions (and possibly strengthen a job or task); b) obtaining the times required for those motions; c) determining what performance level for that job or task ought to be; d) the organization and storage of this information in a database or other format for prediction of future similar jobs or tasks.

**predicted four-hour sweat rate (P4SR)**

A measure of heat stress based on empirically determined values using physically fit, acclimatized males for estimating the maximum

workload via the amount of water perspired with consideration for the clothing worn, the metabolic rate, and the environmental conditions.

**predictive display**

A display which shows an operator, through the use of extrapolation from current data, an estimate of the position of a point or object at a later time.

**predictive maintenance**

That type of maintenance performed when one or more sensors or other indicators present information that a system or piece of equipment is about to fail.

**predictive validity**

Having a high correlation between applicant test results and later performance on the job.

**pre-discharge employee alarm**

An alarm which will sound at a set time prior to actual discharge of an extinguishing system so that employees may evacuate the discharge area prior to system discharge.

**predisposing factors**

Factors such as age, sex, weight, skin color, health status, etc. which may increase an individual's susceptibility to a potential hazard.

**pre-employment physical examination**

A physical examination of a job applicant prior to employment.

**pre-employment screening**

The use of information from pre-employment examinations and/or background checks to verify that an individual passes certain criteria prior to employment.

**pre-employment test**

Any physical skill/ability or mental function test given to job applicants prior to employment.

**preemption**

The legal doctrine providing that a higher level of government can promulgate legislation (or implication in legislation) to prevent a lower level of government from regulating the same area or certain subject matter, as for instance, national security, transportation in interstate commerce, nuclear energy, taxation, pesticide registration, worker safety, and the like.

**preferential assignment**

An agreement whereby one company is given first choice in the use of a particular facility in the port. Also called *first call on berth privilege*.

**preferential route**

Preferential routes, preferential departure route (PDR), preferential arrival route (PAR), and preferential departure arrival route (PDAR)) are adapted in Air Route Traffic Control Center (ARTCC) computers to accomplish inter/intrafacility controller coordination and to assure that flight data are posted at the proper control positions. Locations having a need for these specific inbound and outbound routes normally publish such routes in local facility bulletins, and their use by pilots minimizes flight plan route amendments. When the workload or traffic situation permits, controllers normally provide radar vectors or assign requested routes to minimize circuitous routing.

**preferential shop**

(1) A place of employment in which union members are given preference over nonunion members in matters of employment by agreement with the employer. (2) A labor situation in a business in which preference is given to union persons in hiring and layoff, but nonunion persons may be hired when members of the union are not available.

**preferred highway**

See *preferred route*.

**preferred instrument flight rules route**

Routes established between busier airports to increase system efficiency and capacity. They normally extend through one or more Air Route Traffic Control Center (ARTCC) areas and are designed to achieve balanced traffic flows among high density terminals. Instrument flight rules (IFR) clearances are issued on the basis of these routes except when severe weather avoidance procedures or other factors dictate otherwise. Preferred IFR routes are listed in the Airport/Facility Directory. If a flight is planned to or from an area having such routes but the departure or arrival point is not listed in the Directory, pilots may use that part of a Preferred IFR route which is appropriate for the departure or arrival point that is listed. Preferred IFR routes are corre-

lated with standard instrument departures (SID) and standard terminal arrival routes (STAR) and may be defined by airways, jet routes, direct routes between NAVAIDs, Waypoints, NAVAID radials/distance measuring equipment (DME), or any combinations thereof.

**preferred limb**

A preference in the use of one limb over the other.

**preferred line of sight**

That deviation from the horizontal plane at which an individual aligns his/her line of sight for the task at hand. Typically about 10° to 15° below the horizontal plane for VDT tasks.

**preferred route**

A highway for shipment of highway route-controlled quantities of radioactive materials so designated by a state routing agency, and any Interstate System highway for which an alternative highway has not been designated by such state agency as provided by 49 CFR 177.826(b).

**preferred speech interference level (PSIL)**

The average sound pressure levels of noise (in dB) in three octave bands with 500 Hz, 1kHz, and 2 kHz center frequencies.

**prehensile**

Adapted for grasping.

**prejudicial error**

An error substantially affecting an appellant's legal rights and obligations.

**preliminary assessment**

The process of collecting and receiving available information about a known or suspected waste site or release.

**preliminary evidence**

Such evidence as is necessary to commence a hearing or trial and which may be received conditionally in anticipation of other evidence linking it to issues in the case.

**preliminary hazard analysis (PHA)**

System safety analysis method used to formally evaluate and document the hazard risks associated with a new or modified system.

**preliminary hazard list (PHL)**

A first-look method of identifying potential or existing hazards associated with system de-

sign. The PHL can be used to assist in the development of a *preliminary hazard analysis* or other type of analyses.

**preloading**

Having an individual carry out a fatiguing task prior to engaging in a task which measures performance.

**premanufacture notification (PMN)**

A notice must be made to the EPA when a company intends to manufacture or import a new chemical or when a company intends to develop a significant new use for a chemical substance.

**premises wiring system**

That interior and exterior wiring, including power, lighting, control, and signal circuit wiring together with all of its associated hardware, fittings, and wiring devices, both permanently and temporarily installed, which extends from the load end of the service drop, or load end of the service lateral conductors to the outlet(s). Such wiring does not include wiring internal to appliances, fixtures, motors, controllers, motor control centers, and similar equipment.

**premium bonus**

An incentive plan in which the worker's award is based on the amount of time saved from the allotted time for a task.

**premium gasoline**

Gasoline having an antiknock index (R+M/2) greater than 90. Includes both leaded premium gasoline as well as unleaded premium gasoline. *See also gasoline.*

**premium grade gasoline**

A grade of unleaded gasoline with a high octane rating (approximately 92) designed to minimize pre-ignition or engine "knocking" by slowing combustion rates. *See also gasoline.*

**premium leaded gasoline**

Gasoline having an antiknock index (R+M/2) greater than 90 and containing more than 0.05 grams of lead or 0.005 grams of phosphorus per gallon. *See also gasoline.*

**premium time**

*See overtime.*

**premium unleaded gasoline**

Gasoline having an antiknock index (R+M/2) greater than 90 and containing not more than 0.05 grams of lead or 0.005 grams of phosphorus per gallon. *See also fuel, gasohol, gasoline, and kerosene.*

**prenatal**

Referring to the time prior to birth.

**preponderance of evidence**

A point of law defined as that quantum of evidence which is sufficient to convince the judge that the facts asserted by a proponent are more likely to be true than false.

**pre-position**

Placing an object in a specified location so that it may be grasped for another operation when needed.

**pre-program**

To place into memory a software or firmware set of instructions and data into a device prior to its undertaking the activity that will use that instruction set.

**preprogrammed movement**

*See ballistic movement.*

**pre-prototype**

A model constructed from commercially available materials or components to demonstrate form, fit, and/or general function.

**Pre-Quaternary**

*See Quaternary.*

**prerequisites of biomechanical work tolerance**

A set of recommendations covering postural, engineering, and movement considerations for improving performance, reducing stress, and possibly preventing occupational injuries.

**presbycusis**

Hearing loss due to normal aging, as opposed to hearing loss due to environmental or occupational exposure to noise.

**presbyopia**

A refractive disability of the eye caused by the loss of lens elasticity with age, resulting in a focal point posterior to the retina and the subsequent inability to see near objects clearly or read small print.

**prescriptive zone**

That environmental temperature above which the body cannot maintain thermal equilibrium

for the working conditions and in which precautions for heat stress should be implemented.

**presentation human factors**

That field dealing with the study or use of oral or written presentations and those variables involved in the communication of information.

**pressure**

(1) Force applied or distributed over an area and measured as force per unit area. (2) The normal force exerted by a fluid or gas per unit area on the walls of its containment. It is expressed as the force per unit area, such as pounds per square inch.

**pressure component**

A component such as lines, fittings, valves, regulators, and transducers in a pressurized system. Normally, pressure vessels or pressurized structures are excluded, because of the potential energy contained, they generally require additional analysis, test, and inspection.

**pressure-demand respirator**

A type of respirator that provides a positive pressure during both inhalation and exhalation and delivers an air flow of about 115 L/min (4 cfm) before a negative pressure is measurable at the face mask.

**pressure drop**

The loss of static pressure across a point; for example, in a ventilation system the pressure drop across an elbow is 0.40 inch w.g. (water gauge).

**pressure gradient**

The rate of decrease of pressure per unit of distance. On the same chart, when the isobars are close together, the pressure gradient is steep. When the isobars are far apart, the pressure gradient is weak.

**pressure gradient force**

The force due to differences in pressure within the atmosphere that causes air to move and, hence, the wind to blow. It is directly proportional to the pressure gradient.

**pressure loss**

The energy loss associated with the movement of air through a ventilation system as a result of friction and turbulence. It typically

measured in inches of water. *See also [pressure drop](#).*

**pressure sewers**

A system of pipes in which water, wastewater, or other liquid is transported to a higher elevation by use of pumping force.

**pressure system**

Any system above 0 psig that is classified as follows: low pressure, 0 to 500 psi; medium pressure, 501 to 3000 psi; high pressure, 3001 to 10,000 psi; ultrahigh pressure, above 10,000 psi. NOTE: The degree of hazard of a pressure system is proportional to the amount of energy stored, not the amount of pressure it contains; therefore, low pressure, high volume systems can be as hazardous to personnel as high pressure systems.

**pressure tendency**

The rate of change of atmospheric pressure within a specified period of time, most often three hours. Same as *barometric tendency*.

**pressure vessel**

A container that stores pressurized fluids and a) contains stored energy of 14,240 foot pounds (19,130 joules) or greater based on adiabatic expansion of a perfect gas; or b) contains gas or liquid which will create a mishap (accident) if released; or c) will experience a MEOP greater than 100 psia. Excluded are special equipment including batteries, cryostats (or dewars), heat pipes, and sealed containers; or d) per ASME definition, summarized briefly as those pressure containers that are integral pumps or compressors, hot water heaters and boilers, vessels pressurized in excess of 15 psi (regardless of size), and vessels with a cross-sectional dimension greater than 6 inches (regardless of length of the vessel or the pressure). *See also [MEOP](#).*

**pressurized structure**

A structure designed to carry both internal pressure and vehicle structural loads. The main propellant tank of a launch vehicle is a typical example.

**pressurized system**

A system that consists of pressure vessels or pressurized structures, or both, and other pressure components such as lines, fittings, valves, and bellows that are exposed to (and structurally designed largely by) the acting pressure. Electrical or other control devices

required for system operation are not included in the definition. A pressurized system is often referred to as a pressure system, which is not a completely accurate reference. *See also [pressure system](#)*.

**presumption**

An assumption made by law which establishes a fact without the need to prove it.

**presumption of innocence**

A hallowed principle of criminal law to the effect that the government has the burden of proving every element of a crime beyond a reasonable doubt and that the defendant has no burden to prove his/her innocence. It arises at the first stage of the criminal process but it is not a true presumption because the defendant is not required to come forward with proof of his/her innocence once evidence of guilt is introduced to avoid a directed verdict of guilty. Presumption of innocence succinctly conveys the principle that no person may be convicted of a crime unless the government carries the burden of proving his/her guilt beyond a reasonable doubt but it does not mean that no significance at all may be attached to the indictment.

**presumptive asbestos-containing material (PACM)**

Material that is assumed to be asbestos-containing without testing it to determine the presence of asbestos at 1% by weight.

**presumptive damages**

A term occasionally used as the equivalent of *exemplary* or *punitive damages*.

**pretreatment**

Processes used to reduce, eliminate, or alter the nature of wastewater pollutants from non-domestic sources before they are discharged into a publicly owned treatment works (POTW).

**pretreatment processes**

Used to reduce, eliminate, or alter the nature of wastewater pollutants from non-domestic sources before they are discharged into publicly owned treatment works.

**pre-trial conference**

A procedural device used prior to trial to narrow issues to be tried, to secure stipulations as to matters of evidence to be heard, and to take all other steps necessary to aid in the disposition of the case.

**pre-trial discovery**

Those devices which may be used by the parties to an action prior to trial to discover evidence and otherwise prepare for trial. These include interrogatories, depositions, requests for admission of fact, etc., and are provided for under rules of procedure as well as certain statutes.

**prevailing wind**

The wind direction most frequently observed during a given period.

**prevalence rate**

The ratio of the number of cases of some condition at one point in time to the total population at risk at that time. The prevalence rate is often expressed as a percentage.

**prevention**

Measures taken to minimize the release of wastes to the environment.

**prevention of significant deterioration (PSD) program**

(1) Under the Clean Air Act, before one can construct a "major" new source in an area addressed by a NAAQS, one must obtain a permit under the PSD program, showing that the source will comply with ambient air quality levels and will employ best available control technology (BACT). (2) The EPA program in which state and/or federal permits are required that are intended to restrict emissions for new or modified sources in locations where air quality is already better than required to meet primary and secondary ambient air quality standards. *See also [ambient air quality standards](#) and [best available control technology](#)*.

**preventive maintenance (PM)**

(1) The systematic servicing and inspection of motor vehicles on a predetermined time, mileage or engine-hour basis. The period varies with the type of equipment and the purpose for which it is assigned. (2) Scheduled overhaul or repair. *See also [maintenance](#) and [maintenance control center](#)*.

**preview control**

Having the use of predictive displays for a teleoperator.

**prickly heat**

A condition due to obstruction of the ducts of the sweat glands, probably as the result of irritation of the skin surface. Characterized by



skin reddening, itching, and swelling. Also called *heat rash*. See also *miliaria*.

**prima facia**

Term of law used to describe a case that has been established without the need for further development or investigation. The "first proof" which the plaintiff or other party in an adjudicatory proceeding must adduce to establish the elements of the claim or cause of action, without which a case can be dismissed or lost. It is sometimes said that there is a "burden of going forward" or a "burden to produce" what is called a prima facie case.

**prima facie evidence**

Evidence good and sufficient on its face.

**prima facie tort**

The infliction of intentional harm, resulting in damage, without excuse or jurisdiction, by an act or series of acts which would otherwise be lawful.

**primacord**

A detonating fuse used in destruction or separation functions associated with launch vehicle operations.

**primary calibration**

With instruments, a calibration procedure in which the instrument output is observed and recorded while the input stimulus (sample) is applied under precise conditions, usually from a primary standard traceable to the National Institute of Standards and Technology.

**primary calibration method**

With regard to flow rates, primary calibration methods for determining sample pump flow rate are generally direct measurements of volume on the basis of the physical dimensions of an enclosed space. The use of a spirometer, Mariotti bottle, or a soap bubble meter are primary calibration methods for pumps.

**primary color**

Any of the colors red, green, or blue.

**primary drinking water regulation**

Applies to public water systems and specifies a contaminant level, which, in the judgment of the EPA Administrator, will have no adverse effect on human health.

**primary electron**

The electron ejected from an atom by an initial ionizing event, as caused by a photon or beta particle.

**primary event**

See *top event*.

**primary evidence**

Original or first-hand evidence.

**primary flight display (PFD)**

A display from any of the primary flight instruments.

**primary flight instrument**

Any of the following types of instruments in an aircraft cockpit: attitude indicator, air-speed indicator, vertical speed indicator, altimeter, turn and bank indicator, and heading indicator.

**primary irritant**

A substance that produces a recognized irritating effect at the location of skin contact. Primary irritants affect everyone but all primary irritants do not produce the same degree of irritation.

**primary motor vehicle controls**

Those controls involved in moving, directing, and stopping a motor vehicle, including the throttle, steering mechanism, and brake pedal.

**primary pollutant**

A pollutant emitted directly from a polluting source. Primary pollutants can be those emitted to the air, water, soil, or other medium. Primary pollutants are closely regulated under various environmental regulatory schemes.



*Primary pollutants are closely regulated sources of emissions*

**primary positioning movement**

The first movement an operator makes in positioning a control device.

**primary radiation**

That which arises directly from the target of an x-ray tube or from a radioactive source.

**primary railway**

Tracks providing a direct route through an area.

**primary skin irritant**

A material that acts directly on the skin, disturbing membrane structure and affecting the osmotic pressure of skin cells.

**primary standard**

(1) *General*. An original standard, typically found only in national or international laboratories, and from which other standards are derived. (2) *Air Pollution*. The EPA's standards which are designed to protect human health with an adequate margin of safety. A national (U.S.) primary ambient air quality standard promulgated under the Clean Air Act. It is a level of air quality that will protect public health. (3) *Flow Rate*. A device which enables the direct measurement of the volume of air flow on the basis of the physical dimen-

sions of an enclosed space, such as by use of a spirometer, Mariotti bottle, or soap bubble meter. Such devices have no working parts and are not subject to corrosion or friction to any extent.

**primary task**

That task to which an individual should pay the greatest attention and which is of the most importance or highest criticality.

**primary transportation**

Conveyance of large shipments of petroleum raw materials and refined products usually by pipeline, barge, or ocean-going vessel. All crude oil transportation is primary, including the small amounts moved by truck. All refined product transportation by pipeline, barge, or ocean-going vessel is primary transportation.

**primary treatment**

A first stage in water treatment in which floating or settleable solids are removed.

**primary use**

*Aviation*. The use category in which an aircraft flew the most hours. The ten use categories are aerial application, aerial observation, commuter air carrier, demand air taxi, business transportation, executive/corporate transportation, instructional flying, personal flying, other work, and other.

**primary viewing area**

That portion of a display, screen, or window on which are presented the data and/or text generated by the operator or by a computer in response to a query or computation.

**primary waste treatment**

First steps in wastewater treatment; screens and sedimentation tanks are used to remove most material that floats or will settle. Primary treatment results in the removal of about 30 percent of carbonaceous biochemical oxygen demand from domestic sewage.

**primate**

An individual belonging to the order Primates, which includes man, apes, monkeys, and lemurs.

**prime mover**

Any muscle which produces or maintains a specific motion or posture. Also referred to as *agonist*.

**primitive solid**

In computer modeling, a basic three-dimensional form which may be used to build more complex forms.

**principal arterial**

Major streets or highways, many with multi-lane or freeway design, serving high-volume traffic corridor movements that connect major generators of travel. *See also arterial highway and minor arterial.*

**principal impact point**

The impact that is judged to have produced the greatest personal injury or property damage for a particular vehicle.

**principal place of business**

A single location designated by the motor carrier, normally its headquarters, where records required by 49 CFR 387, 390, 391, 395, and 396 will be maintained. Provisions are made for maintaining certain records at locations other than the principal place of business.

**principle or major uses**

Under the Federal Land Policy and Management Act of 1976: Includes, and is limited to, domestic livestock grazing, fish and wildlife development and utilization, mineral exploration and production, rights-of-way, outdoor recreation, and timber production.

**principle of equivalence**

A rule which states that forces imposed by acceleration on a body, whether due to motion or gravity, are equivalent.

**principles of agency**

Term of law that holds that a principal (the employer) is responsible for the acts of any of its agents (employees) that are within the scope of the agency relationship (employment).

**principles of motion economy**

*See motion efficiency principles.*

**principles for motion improvement**

*See motion efficiency principles.*

**print**

To put text, graphics, or other form of computer output into a form for display, especially for hardcopy.

**priority U.S. mail**

Mail bearing postage for air transportation that goes by air on a priority basis at air mail service rates.

**pristine sites**

Property free of damage or decay.

**privacy laws**

Those federal and state statutes which prohibit an invasion of a person's right to be left alone, and also restrict access to personal information, and overhearing of private communications.

**private carrier**

(1) Those who transport only in particular instances and only with whom they choose to contract. (2) A commercial motor carrier whose highway transportation activities are incidental to, and in furtherance of, its primary business activity. *See also carrier and common carrier.*

**private entity**

Any entity other than a public entity. *See also public entity.*

**private fleet vehicle**

Ideally, a vehicle could be classified as a member of a fleet if it is a) operated in mass by a corporation or institution, b) operated under unified control, or c) used for non-personal activities. However, the definition of a fleet is not consistent throughout the fleet industry. Some companies make a distinction between cars that were bought in bulk rather than singularly, or whether they are operated in bulk, as well as the minimum number of vehicles that constitute a fleet (i.e., 4 or 10).

**private label merchandiser (PLM)**

Any person engaged in the business of selling or distributing, under his/her own trade name, boats or items of associated equipment manufactured by another.

**private motor carrier (of passengers)**

A person who is engaged in an enterprise and provides transportation of passengers by motor vehicle, that is within the scope of, and in the furtherance of that enterprise.

**private motor carrier (of property)**

A person who provides transportation of property by motor vehicle, and is not a for-hire motor carrier.

**private nuisance**

A private nuisance is generally anything that, by its continuous use or existence, causes annoyance, harm, unreasonable interference, inconvenience, or damage to another landowner in the enjoyment of his/her property.

**private pilot**

A private pilot may not act as a pilot-in-command of aircraft that is carrying passengers for compensation or hire nor act as pilot-in-command in an aircraft that is being operated for compensation or hire (e.g., one that has been hired to do pipeline patrol but carries no passengers).

**private road**

Private road with restricted public use.

**private track or siding**

A track located outside of a carrier's right-of-way, yard, or terminals where the carrier does not own the rails, ties, roadbed, or right-of-way and includes track or portion of track which is devoted to the purpose of its user either by lease or written agreement, in which case the lease or written agreement is considered equivalent to ownership.

**private transportation**

(1) Any transport service that is restricted to certain people and is, therefore, not open to the public at large. (2) Owned or operated by an individual or group, not a governmental entity, for his/her or its own purposes or benefit.

**private-use airport**

An airport which is not open for the use of the general public.

**privately owned airport**

An airport which is owned by a private individual or corporation.

**privately owned vehicle (POV)**

Employee's own vehicle used on official business for which the employee is reimbursed by the government on the basis of mileage.

**privilege**

A particular and peculiar benefit or advantage enjoyed by a person, company, or class, beyond the common advantages of other citizens.

**privilege against self-incrimination**

The privilege derived from the Fifth Amendment of the U.S. Constitution, and similar

provisions in the constitutions of states. It requires the government to prove a criminal case against the defendant without the aid of the defendant as a witness against himself or herself, though it protects only communications, not physical evidence such as handwriting and fingerprints.

**privileged communications**

Those statements made by certain persons within a protected relationship such as husband-wife, attorney-client, priest-penitent, and the like which the law protects from forced disclosure on the witness stand at the option of the witness, client, penitent, spouse.

**pro forma invoice**

An abbreviated invoice, sent in advance of the regular invoice for the customs clearance of the goods, the purpose being to acquaint the importer and/or government authorities of the importing country with the main details of a shipment to be made and showing reasonably close approximations of the actual weights, quantities, and values.

**proactive inhibition**

That reduced efficiency in retention of a set of information caused by previous learning.

**probabilistic process**

A mathematically described phenomenon for which the instantaneous amplitude values can not be specified uniquely at any given instant of time.

**probability**

(1) An event that can reasonably be expected to occur on the basis of available evidence. (2) The value of the ratio of the number of ways one or more specified events can occur to the total number of events which may occur. Expressed as a number between 0 and 1. (3) The likelihood of observing a particular result or event, especially within a specified time or a given set of circumstances.

**probability density**

The ordinal value for a point corresponding to a certain deviation measure on a probability distribution function.

**probability distribution function (PDF)**

A non-monotonic graphical, mathematical, or tabular representation of a function whose peak is the mode and whose ordinal values represent the probability density function.

Represents the bell-shaped curve for the normal and "t" distributions, varying curve shapes for other distributions.

**probability forecast**

A forecast of the probability of occurrences of one or more of a mutually exclusive set of weather conditions.

**probability theory**

In failure analysis, the examination of the likelihood of a specific failure or fault event, given a single opportunity for occurrence of that event.

**probable**

In terms of probability of hazard or mishap occurrence, a hazard or event likely to occur several times during the life of an item.

**probable cause**

Reasonable cause. Having more evidence for than against. A reasonable ground for belief in certain alleged facts.

**problem analysis**

The identification and study of the cause(s) of a problem.

**problem sensitivity**

The ability to notice when something is faulty or likely to become so.

**procarcinogen**

A substance that is converted into a carcinogen as a result of its activation through the metabolic process.

**procedural analysis**

The use of flow charts, decision tables, etc. to develop and/or represent the sequence in which a task is to be performed.

**procedural defense**

Focuses on the validity of OSHA's enforcement procedures and the procedures used by the OSHRC in contested cases.

**procedural due process**

The guarantee of procedural fairness which flows from both the Fifth and Fourteenth Amendments' due process clauses of the Constitution. For the guarantees of procedural due process to apply, it must first be shown that a deprivation of a significant life, liberty, or property interest has occurred. This is necessary to bring the due process clause into play.

**procedural mandate**

Provides guidance to federal agencies on how certain decisions are to be made. Procedural mandates are basically rules governing the operation of an agency's decision-making process. The most prevalent of the procedural mandates is the Administrative Procedures Act (APA) of 1946 (5 U.S.C. Section 551).

**procedure**

Any instruction set or sequence of actions used to accomplish a given task.

**procedure turn**

The maneuver prescribed when it is necessary to reverse direction to establish an aircraft on the intermediate approach segment or final approach course. The outbound course, direction of turn, distance within which the turn must be completed, and minimum altitude are specified in the procedure. However, unless otherwise restricted, the point at which the turn may be commenced and the type and rate of turn are left to the discretion of the pilot.

**proceeding**

In a general sense, the form and manner of conducting juridical business before a court or judicial officer. Regular and orderly progress in the form of law, including all possible steps in an action from its commencement to the execution of judgment.

**process**

(1) *General*. Any predetermined or planned series of continuous or repetitive steps or operations, usually involving the movement of people, materials, forms, or other entities from one location to another, with the intent to bring about some desired product or result. (2) *TSCA*. The preparation of a chemical substance or mixture, after its manufacture, for distribution in commerce. (3) *OSHA*. Any activity or combination of activities including use, storage, manufacturing, handling, the on-site movement of highly hazardous chemicals (HHC), or any group of vessels which is interconnected and separate vessels which are located such that a HHC could be involved in a potential release (with some exceptions). (4) *Anatomy*. A prominent projection from a bone.

**process chart**

A graphic/symbolic, diagrammatic, and textual description of the events occurring in some activity.

**process chart symbol**

One of a standard set of five graphical objects for representing actions or events to be used on a variety of process charts: operation, transportation, inspection, delay, and storage.

**process control**

The manual or automatic direction of processing or operating conditions to effect a desired output by maintaining certain standard or specified operating tolerance conditions.

**process control chart**

A chronologically organized graphical or symbolic tabular presentation of a process, including pertinent data from each sub-process.

**process control engineering**

That engineering field involving developing and implementing the techniques used in process control.

**process costing**

A cost determination in which manufacturing costs are spread over the units produced by department.

**process engineering**

The selection and designation of the processes, operational sequences, and tools to be used in making a product.

**process fuel**

All energy consumed in the acquisition, processing, and transportation of energy. Quantifiable process fuel includes three categories: natural gas lease and plant operations, natural gas pipeline operations, and oil refinery operations.

**process hazard analysis (PHA)**

A thorough, orderly, and systematic approach to identify, evaluate and control highly hazardous chemical processes. It involves a review of what could go wrong, and what steps may be taken to safeguard against highly hazardous chemical releases.

**process layout**

A type of plant layout in which machinery performing similar functions is placed in the same area.

**process safety information (PSI)**

Written information on the highly hazardous chemicals, technology, and equipment associated with a process.

**process sheet**

A sequential listing, sketch, or diagram of a process.

**process time**

The time expected, allowed, or required to complete a process.

**process weight**

Total weight of all materials, including fuel used in a manufacturing process. It is used to calculate the allowable particulate emission rate from the process.

**processing site**

Under the Federal Uranium Mill Tailings Radiation Control Act of 1978: Any site, including the mill, containing residual radioactive materials at which all or substantially all of the uranium was produced for sale to any federal agency prior to January 1, 1971 under a contract with any federal agency, except in the case of a site at or near Slick Rock, Colorado, unless such site was owned or controlled as of January 1, 1978, or is thereafter owned or controlled by any federal agency or a licensee for the production at such site of any uranium or thorium product derived from ores is in effect on January 1, 1978, or is issued or renewed after such date. Also any other real property or improvement thereon which is in the vicinity of such site and is determined by the Secretary of Energy to be contaminated with residual radioactive materials derived from such site.

**processor**

The primary chip that operates a computer.

**product**

Any single entity resulting from an integrated effort consisting of one or more steps. May be a physical item or a service.

**product layout**

A type of plant layout in which all machinery and tools involved in the manufacturing of a particular product or product line are located together.

**product liability**

The liability of a manufacturer, processor, or nonmanufacturing seller arising from personal



injury or property damage caused by a defective or dangerous product.

**product liability insurance**

Type of liability coverage which protects manufacturers and suppliers from claims for accidents arising out of the use of their products. *See also insurance.*

**product line**

A class of products manufactured or sold by a single company.

**production capacity**

The maximum potential output of a facility for a given set of conditions, including time, personnel, and cost.

**production economics**

The analysis or practice of attempting to optimize input and output costs to make a profit.

**production facility**

Piping or equipment used in the production, extraction, recovery, lifting, stabilization, separation or treatment of petroleum or carbon dioxide, or associated storage or measurement. To be a production facility under this definition, piping or equipment must be used in the process of extracting petroleum or carbon dioxide from the ground or from facilities where CO<sub>2</sub> is produced, and preparing it for transportation by pipeline. This includes piping between treatment plants which extract carbon dioxide, and facilities utilized for the injection of carbon dioxide for recovery operations.

**production flow analysis**

The study of the routing of a part, component, or system through the various machines and workplaces and the operations it undergoes in a manufacturing or integration facility.

**production item**

A finished product intended for full and complete use, with the production line operational.

**production standard**

Any performance or quality standard established for a manufacturing or service facility, such as standard time or number rejects.

**production study**

An extensive, continuous analysis of the components of production-related activities. Normally, to check a standard or determine the variables and their effects on output.

**production time**

The total time required for facility preparation, manufacturing, and testing of a product.

**productive labor**

*See direct labor.*

**productive time**

That time during which useful work is performed.

**productivity**

(1) The value of the ratio of actual output to standard output. Also referred to as *operator productivity*. (2) Any measure of the rate of output relative to the personnel and financial cost supporting that output. (3) A measure of efficiency of resource utilization; defined as the sum of the outputs divided by the sum of the inputs.

**productivity improvement**

Having an individual or group produce more goods or services within a given time, compared to some previous measure.

**productivity index**

The value of the ratio of objective production output to employee hours and other resources used.

**professional eczema**

*See industrial dermatitis.*

**professional engineer (PE)**

An individual who has satisfactorily demonstrated, through examination and experience, that he/she has met all the requirements established by a specific state or states to practice as a professional engineer and is so designated.

**proficiency**

The level of an individual's acquired knowledge or skill in a particular field or task.

**Proficiency Analytical Testing Program**

A program administered by the American Industrial Hygiene Association (AIHA) for evaluating the performance of industrial hygiene analytical laboratories and accrediting them if they meet specific requirements. *See also PAT Program.*

**proficiency testing**

An interlaboratory testing program in which samples are sent to participating laboratories for analysis. The laboratory results are compared for the purpose of improving laboratory performance.

**profile analysis**

The study of groupings of persons or objects.

**profile descent**

*Aviation.* An uninterrupted descent (except where level flight is required for speed adjustment (e.g., 260 knots at 10,000 feet mean sea level) from cruising altitude/level to interception of a glide slope or to a minimum altitude specified for the initial or intermediate approach segment of a nonprecision instrument approach. The profile descent normally terminates at the approach gate or where the glide slope or other appropriate minimum altitude is intercepted.

**profit sharing**

An incentive plan through which a company pays its employees based on company profits in addition to the employee's regular pay.

**progesterone**

A steroid with progestational activity, isolated from human ovaries, adrenal cortex, and placenta. Progesterone plays a major part in the menstrual cycle.

**prognosis**

A forecast or outlook with regard to the probable outcome of an illness or injury, such as complete recovery, partial recovery, or death.

**prognostic chart**

A chart showing expected or forecast conditions, such as pressure patterns, frontal positions, contour height patterns, and so on.

**program**

An organized effort involving several groups or people toward accomplishing some goal.

**Program Evaluation and Review Technique (PERT)**

A sophisticated management technique for defining and interrelating the various tasks which must be performed to complete a job on time, then tracking the work as the job progresses.

**Program for European Traffic with Highest Efficiency and Unprecedented Safety (PROMETHEUS)**

A project involving the European Community with automotive and electronic manufacturing companies to develop future highway vehicle systems.

**program manager**

In military and/or other government agencies, as well as their contracting organizations, the term used to identify that person responsible for total contract management and administration, including the system safety effort. Likened to the vice president or general manager in the private sector.

**programmable function key**

A function key whose action may be altered within an application or between applications.

**Programmable Indicator Data Processor (PIDP)**

*Aviation.* A modification to the AN/TPX-42 interrogator system currently installed in fixed Radar Approach Controls (RAPCON). The PIDP detects, tracks, and predicts secondary radar aircraft targets. These are displayed by means of computer-generated symbols and alphanumeric characters depicting flight identification, aircraft altitude, ground speed, and flight plan data. Although primary radar targets are not tracked, they are displayed coincident with the secondary radar targets as well as with the other symbols and alphanumerics. The system has the capability of interfacing with Air Route Traffic Control Centers (ARTCC).

**programmed inspections**

Those OSHA inspections conducted as part of OSHA's regularly scheduled inspection process.

**progress chart**

An graphical representation of the status of the work underway. *See also Gantt chart.*

**progression**

Hypothesized stage in cancer development in which cells become malignant.

**progressive resistance exercises (PRE)**

A system for increasing the amount of loads lifted, both within a session and across sessions. Also referred to as *DeLorme exercises*.

**progressive taxi**

*Aviation.* Precise taxi instructions given to a pilot unfamiliar with the airport or issued in stages as the aircraft proceeds along the taxi route.

**prohibited area**

Designated airspace within which the flight of aircraft is prohibited.

**prohibited condition**

Any condition in a permit space that is not allowed by the permit during the period when entry is authorized.

**project**

*Rail Operations.* A locally sponsored, coordinated, and administered program, or any part thereof, to plan, finance, construct, maintain, or improve an intermodal passenger terminal, which may incorporate civic or cultural activities where feasible in an architecturally or historically distinctive railroad passenger terminal.

**project cargo**

Large shipments of varied cargo destined for one location and one specific project.

**project depth**

The minimum depth of the river channel in a given area prescribed in the channel maintenance and construction program; normally 9 feet throughout the western rivers. Buoys are set in reference to project depth.

**project evaluation tree (PET)**

A system safety analytical technique which was developed from the more extensive management oversight and risk tree (MORT) method of analysis. A simplified and efficient method to evaluate a project or operation. Especially useful in the analysis of accidents and hazards.

**projected anthropometric measurement**

(1) An estimate of the future value of an anthropometric measure from a current measure, either of the same individual or the population as a whole. (2) An estimate of an unknown anthropometric measure on an individual from two or more other known anthropometric measures, whether from the same or other individuals.

**projection**

(1) A throwing forward, especially the reference of impressions made on the sense organs to their proper source. The act of extending or jutting out, or a part that juts out. (3) A mental mechanism whereby emotionally unacceptable traits are denied by a person as his/her own and attributed (projected) to another. This type of projection is commonly referred to as *blaming*.

**proliferation**

(1) To reproduce or produce new growth or parts rapidly and repeatedly. (2) The reproduction or multiplication of similar forms, especially of cells and morbid cysts.

**PROMETHEUS**

See *Program for European Traffic with Highest Efficiency and Unprecedented Safety*.

**prominence**

See *solar flare*.

**promotion**

Process in the development of cancer in which initiated cells multiply.

**promotion and sales expenses**

Costs incurred in promoting the use of air transportation generally and creating a public preference for the services of particular air carriers. Includes the functions of selling, advertising and publicity, space reservations, and developing tariffs and flight schedules for publication.

**prompt**

A visually displayed message or other cue which either requests some action of an operator or user or indicates that the system is ready for input.

**promulgate**

Putting a new law or ruling into effect by making its terms known to the public.

**pronasale**

The most anterior point on the nose (the tip of the nose).

**pronasale to back of head**

The horizontal linear distance frominion to the tip of the nose. Measured with the individual standing or sitting erect, and looking straight ahead.

**pronasale to top of head**

The vertical distance from the tip of the nose to the level of the top of the head. Measured with the individual standing or sitting erect and looking straight ahead.

**pronasale to wall**

The horizontal linear distance from a wall or other vertical surface to the tip of the nose. Measured with the individual standing or sitting erect, his/her back against the wall and looking straight ahead.

**pronate**

Rotate the hand, wrist, and forearm counterclockwise as viewed along the arm axis from the shoulder.

**pronator**

Any muscle which causes a pronating motion.

**prone**

(1) Pertaining to a posture having the frontal portion of the body downward, with the torso parallel to the reference surface, and generally with the hips and knees extended. (2) Having a tendency to behave in a certain way.

**proof**

(1) To read a final copy of a written document to verify the absence of errors in spelling, grammar, syntax, etc. (2) The effect of evidence. The establishment of a fact by evidence. Any fact or circumstance which leads the mind to the affirmative or negative of any proposition.

**proof factor**

A multiplying factor applied to the limit load or MEOP to obtain proof load or proof pressure for use in the acceptance testing.

**proof pressure**

(1) The product of MEOP and a proof factor accounting for the difference in material properties between test and service environment (such as temperature). It is used to give evidence of satisfactory workmanship and material quality. For example, demonstrating that the component and/or system will not deform, leak, or fail. (2) May be used to establish maximum initial flaw sizes for safe-life demonstration.

**propellant**

(1) The pressurized gas in a spray can. (2) The chemically formulated material(s) used to propel rockets, missiles, and most space flight vehicles. Can be a solid, a liquid, and in some cases, a gas.

**propellant-actuated power devices**

Any tool or special mechanized device or gas generator system which is actuated by a smokeless propellant or which releases and directs work through a smokeless propellant charge.

**propeller**

(1) A device for propelling an aircraft that has blades on an engine-driven shaft and that,

when rotated, produces by its action on the air, a thrust approximately perpendicular to its plane of rotation. It includes control components normally supplied by its manufacturer, but does not include main and auxiliary rotors or rotating airfoils of engines. (2) The device used for propelling watercraft.

**propeller fan**

A fan with airfoil blades and which moves air in the general direction of the axis of the fan.

**propensity to engage in illegal activities**

Under the Federal Sentencing Guidelines (FSGs): A tendency or inclination by an employee or agent to violate the law or corporate policy. Such employees may have prior criminal conviction records or other past violations of corporate policy. Using due care not to delegate substantial discretionary authority to an individual with such tendencies is one of the seven due diligence steps in having an Effective Compliance Program. *See also Federal Sentencing Guidelines and effective compliance program.*

**proper evidence**

Such evidence as may be presented under the rules established by the law and recognized by the courts (i.e., admissible evidence, material, relevant evidence, etc.).

**properties**

Characteristics such as the physical and chemical properties by which a substance can be identified.

**property damage**

(1) A type of harm involving injury to real estate or personal property, as distinguished from *personal injury*, which is harm to natural persons. (2) Damage to or loss of use of tangible property. (3) The actual or estimated dollar value of vehicle, cargo, and other property damage incurred in motor vehicle accidents.

**property damage accident**

*Federal Highway Administration.* An accident for which property damage of \$4,400 or more, but no fatalities or injuries, was reported.

**property-damage-only crash**

*Transportation.* A police-reported crash involving a motor vehicle in transport on a traf-

ficway in which no injuries of any severity, including fatal injuries, are reported.

**property damage rate**

The average amount of property damage per accident or per one hundred accidents.

**property damage threshold**

The amount of property damage used to determine whether an accident not involving fatalities or injuries is reportable under the Federal Motor Carrier Safety Regulations (FMCSR). In 1994, the property damage threshold was \$4,400.

**property loss prevented**

*U.S. Coast Guard.* Calculated estimate of the amount of property loss that would have occurred had the Coast Guard not rendered assistance. It is based upon value of property assisted in cases where severity of the incident was evaluated as severe or moderate in nature.

**prophylactic**

A preventive treatment for the protection against a disease.

**prophylaxis**

Preventive measure against disease such as the immunization against hepatitis B virus.

**proportional allocation method**

Involves allocating liability according to the percentage of total wastes found at the site that is clearly attributable to each potentially responsible person (PRP).

**proportional control**

Any graded activity between all and none which exercises a controlling function.

**proportional counter**

An instrument in which a gas-filled radiation detection tube or chamber receives pulses that are proportional to the number of ions formed in the gas by the primary ionizing particles.

**proprietary medicine**

Any chemical, drug, or similar preparation used in the treatment of diseases, if such article is protected against free competition as to name, product, composition, or process of manufacture by secrecy, patent, trademark or copyright, or by other means.

**proprioception**

The sense of posture or the physical position/movement of the limbs in relation to one's environment.

**proprioceptor**

Any mechanoreceptor sensitive to position and movement of the body or its parts, including joints, muscles, and tendons.

**prosecuting attorney**

The name of the public officer who is appointed or elected in each judicial district, circuit, or county, to conduct criminal prosecutions on behalf of the State or the people.

**prospecting**

Any activity, including logistic support, the purpose of which is the identification of mineral resource potential for possible exploration and development.

**prospective cohort study**

Identifies a group, or "cohort," that is known to have been exposed to a condition/substance in the past or at present, and the outcome of interest (morbidity, mortality) is followed into the future. The results are compared to the expected result as determined from a cohort of unexposed individuals.

**prospective damages**

Damages which are expected to follow from the act or state of facts made as the basis of a plaintiff's suit; damages which have not yet accrued, at the time of the trial, but which in the nature of things, must necessarily or most probably result from the acts or facts under complaint.

**prostate**

An accessory reproductive organ in the male, located next to and under the bladder and completely surrounding the urethra. It is about the size of a walnut and consists of a median and two lateral lobes. The prostate secretes a thin, slightly alkaline fluid that flows through ducts into the urethra. This fluid is secreted continuously, and the excess passes from the body in the urine. The rate of secretion increases greatly during sexual stimulation and the fluid contributes to the bulk of the semen.

**prosthesis**

An artificial replacement for an organ or limb whose appearance may or may not resemble the original structure, and which may have some of the functionality attributed to the original structure.

**prosthetics**

The study of the design, manufacture, and use of prostheses.

**protanomaly**

A color vision deficiency in the ability to discriminate the red content of colors due to weak red cones.

**protanope**

One having protanopia or protanomaly.

**protanopia**

A color blindness involving an inability to discriminate the red content of colors due to the absence of red cones. There is often some effect on green discrimination as well. Also referred to as *red-blindness*.

**protection factor (PF)**

As pertains to respiratory protection, the ratio of the concentration of a contaminant in the ambient air to that inside a respirator.

**protective clothing**

Special clothing that is worn to protect a worker from exposure to or contact with hazardous materials.

**protective cream**

Any substance designed to protect skin areas during exposure to harmful materials or conditions.

**protective custody**

The condition of one who is held under authority of the law for his/her own protection as in the case of a material witness whose safety is in jeopardy.

**protective hand cream**

A product designed to protect the hands from the harmful effects of some hazardous substances.

**protein**

(1) Any of a set of complex organic molecules consisting of specific sequences of amino acids. (2) Complex nitrogenous organic compounds of high molecular weight that contain amino acids as their basic unit and are essential for growth and repair of animal tissue. Many proteins are enzymes.

**proteinuria**

The presence of an excess of serum proteins in the urine.

**protocol**

*Computing.* Rules and standards for transferring information between computers.

**proton**

An elementary nuclear particle with a positive electric charge equal numerically to the charge of the electron and having a rest mass of 1.007575 atomic mass units.

**protoplasm**

A complex, colloidal substance conceived of as constituting the living matter of plant and animal cells, and performing the basic life functions.

**protoplast**

A membrane bound cell from which the outer cell wall has been partially or completely removed. The term often is applied to plant cells.

**prototype**

A model or preliminary version of a product which is produced prior to fabrication of the production item and is representative of the final system for testing and evaluation.

**protozoan**

Microscopic, single-function cell units of aggregations of non-differentiated cells loosely held together and not forming tissues. Some are pathogenic in humans and other may invade tissues and cause other diseases to develop.

**protuberance**

Any local region on the body or body tissue which projects above the background.

**prover tank**

A tank which is used to check the calibration of liquid flowmeters.

**provisional rate-density relationship**

The relationship between fatality rates and average daily traffic. It is based on data for the 4-year period preceding the calendar year for which detailed data are reported. It is labeled "provisional" to make it clear that it is to be used as a guide rather than a standard. A provisional rate-density relationship may be described graphically or mathematically by a rate-density curve.

**proximate cause**

(1) The cause factor which directly produces the effect without the intervention of any



other cause. The cause nearest to the effect in time and space. (2) That which, in a natural and continuous sequence, unbroken by any efficient intervening cause, produces injury, and without which the result would not have occurred. That which is nearest in the order of responsible causation. That which stands next in causation to the effect, not necessarily in time or space but in causal relation. The proximate cause of an injury is the primary or moving cause, or that which, in a natural and continuous sequence, unbroken by any efficient intervening cause, produces the injury and without which the accident could not have happened, if the injury is one which might be reasonably anticipated or foreseen as a natural consequence of the wrongful act. An injury or damage is proximately caused by an act, or a failure to act, whenever it appears from the evidence in the case, that the act or omission played a substantial part in bringing about or actually causing the injury or damage; and that the injury or damage was either a direct or a reasonably probable consequence of the act or omission. The last negligent act contributory to an injury, without which such injury would not have resulted. The dominant, moving, or producing cause. The efficient cause; the one that necessarily sets the other causes in operation. The causes that are merely incidental or instruments of a superior or controlling agency are not the proximate causes and the responsible ones, though they may be nearer in time to the result. It is only when the causes are independent of each other that the nearest is, of course, to be charged with the disaster. Act or omission immediately causing or failing to prevent injury; act or omission occurring or concurring with another, which, had it not happened, injury would not have been inflicted. *See also concurrent causes, efficient cause, immediate cause, and legal cause.*

#### **proximate damages**

The immediate and direct damages and natural results of the act under complaint, and such as are usual and might have been expected. Remote damages are those attributable immediately to an intervening cause, though it forms a link in an unbroken chain of causation so that the remote damage would not have occurred if its elements had not been set in motion by the original act or event.

#### **proximal**

Referring to a portion of the body or a body segment which is closer to the central longitudinal axis than another part.

#### **proximics**

The study of the nature and effect of the preferred separation distance by individuals in interpersonal situations as a function of culture, psychology, and environmental factors.

#### **proximity measure**

An indication of the distance between some detector and a surface.

#### **proximity operations**

Activity by one entity within a specified distance or volume of another entity.

#### **PRP**

*See **potentially responsible party.***

#### **prudent**

Attentive, careful, and sensible in one's conduct.

#### **pruritis**

Severe itching, usually of undamaged skin.

#### **PSD**

*See **prevention of significant deterioration.***

#### **PSE**

*See **point of subjective equality.***

#### **psi**

Pounds per square inch.

#### **psia**

Pounds per square inch absolute.

#### **psig**

Pounds per square inch gauge.

#### **PSI**

*See **pollutant standard index.** See also **process safety information.***

#### **PSIL**

*See **preferred speech interference level.***

#### **psittacosis**

A pneumonia-like viral disease which occurs in parrots and fowl that can be transmitted to man.

#### **PSM**

Process safety management.

#### **psoriasis**

A chronic, recurrent skin disease marked by bright red patches covered with silvery scales. The lesions appear most often on the knees,

elbows, and scalp, and sometimes in the form of dot-shaped marks on the fingernails. The chest, abdomen, backs or arms and legs, palms of hands and soles of feet are other locations frequently affected. The cause of psoriasis is not completely understood, although the fact that it seems to occur in families with a previous history of the disease suggests a hereditary factor. It may also occur with rheumatoid arthritis, although the connection is not clear.

**psychoanalysis**

A technique for diagnosing and treating mental illness originally developed by Dr. Sigmund Freud.

**psychogenic deafness**

Hearing loss due to a reaction to a physical or social environment. Also referred to as *functional deafness*.

**psychological refractory period**

That phenomenon observed when an individual is attending to two or more stimuli such that the reaction time to each stimulus increases when the inter-stimulus interval between the stimuli decreases.

**psychological shock**

A sudden disturbance of mental equilibrium.

**psychology**

The study of human behavior and its perceptual/cognitive bases.

**psychometric function**

A mathematical or graphical function showing the relationship between a set of stimuli varying quantitatively along a given dimension and the relative frequency with which an observer will give a certain category of response regarding some property of the stimulus.

**psychometrics**

The measurement of psychological processes using experimental design and statistical techniques.

**psychomotor**

Pertaining to both motor and mental processes or activity.

**psychomotor performance**

A measure of the achievement level displayed by an individual in executing a psychomotor task.

**psychomotor skill**

Any acquired muscular action in response to sensory stimuli and/or mental processes.

**psychomotor task**

Any task involving coordination of sensory/cognitive processes and some related motor activity.

**psychophysical measurement**

The process of obtaining data about any of an individual's psychophysical characteristics, or the resulting data from such a process.

**psychophysical method**

Any of a set of standardized procedures for presenting stimuli ranging from fully quantifiable physical stimuli to presently unquantifiable stimuli based on opinions or emotional feelings for an individual's response and applying numerical data to that response.

**psychophysical quantity**

The human perceived value corresponding to some presented stimulus.

**psychophysical scale**

Any range of values which describes a function of human sensitivity or other capability, and which has some type of dimensional unit associated with it.

**psychophysics**

That area of experimental psychology which attempts to quantify relationships between stimuli and their psychological or psychobiological responses.

**psychosocial**

Pertaining to any combination or the interaction of psychological and sociological variables, conditions, or effects.

**psychosocial factors**

Psychological, organizational, and personal stressors that could produce symptoms similar to poor indoor air quality.

**psychosomatic**

Pertaining to mind and body interrelationships.

**psychosomatic medicine**

That medical field dealing with health and disease involving both the mental/emotional and physical components and their interactions.

**psychosomatic reaction**

A bodily response resulting from a stimulus which evokes emotion.

**psychotherapy**

A method or system of alleviating or curing certain forms of disease, particularly diseases of the nervous system or such as are traceable to nervous disorders, by suggestion, persuasion, encouragement, the inspiration of hope or confidence, the discouragement of morbid memories, associations, or beliefs, and other similar means addressed to the mental state of the patient, without (or sometimes in conjunction with) the administration of drugs or other physical remedies.

**psychrometer**

An instrument used to measure the water vapor content of the air. It consists of two thermometers (dry bulb and wet bulb). After whirling the instrument, the dew point and relative humidity can be obtained with the aid of tables.

**psychrometric calculator**

Any simple device for determining the dew point or relative humidity values from dry- and wet-bulb temperature readings and the barometric pressure.

**psychrometric chart**

A graph showing the properties of moist air mixtures such as relative humidity, dew point, etc., and which can be used in air conditioning, ventilation, indoor air studies, and other applications.

**psychrometric formula**

An empirical formula for determining water vapor pressure based on the barometric pressure and psychrometer readings.

**psychrometric table**

A table of values for determining water vapor pressure, relative humidity, and dew point from psychrometer readings.

**psychrophiles**

An instrument for the measurement of dry- and wet-bulb temperature.

**psychrotrophic**

Refers to microorganisms that are cold-temperature tolerant (capable of surviving in temperatures between 0°C and 20°C).

**pternion**

The fleshy tip of the most anterior-projecting toe with all the foot phalanges fully extended.

**PTFE**

Polytetrafluoroethylene.

**ptosis**

The slippage or drooping of a structure below its normal position.

**PTS**

Passive tobacco smoke. *See also permanent threshold shift.*

**PTT**

*See part-task trainer.*

**pubic crotch height**

The vertical distance from the floor to most superior portion of the crotch in the midsagittal plane. Measured with the individual standing erect and his/her weight balanced equally on both feet.

**pubic crotch length**

The surface distance from the anterior waist midpoint through the crotch and over the maximum protrusion of the buttock to the posterior waist level above the buttock.

**pubic symphysis**

The fibrocartilaginous joint in the midline between the two coxal bones.

**public aircraft**

Aircraft used only in the service of a government, or a political subdivision. It does not include any government-owned aircraft engaged in carrying persons or property for commercial purposes.

**public authority**

*Transportation.* Means a federal, state, county, town or township, Indian tribe, municipal or other local government or instrumentality thereof, with authority to finance, build, operate, or maintain highway facilities, either as toll or toll-free highway facilities.

**public crossing**

A location open to public travel where railroad tracks intersect a roadway that is under the jurisdiction and maintenance of a public authority.

**public defender**

An attorney appointed by a court or employed by a government agency whose work consists

primarily of defending indigent defendants in criminal cases.

**public domain**

Land and water in possession and owned by the United States and the states individually, as distinguished from lands privately owned by individuals or corporations.

**public drainage way**

The land reserved or dedicated for the installation of stormwater sewers or drainage ditches, or required along a natural stream or watercourse for preserving the channel and providing for the flow of water to safeguard the public against flood damage, sedimentation, and erosion.

**public entity**

(1) Any state or local government. (2) Any department, agency, special purpose district, or other instrumentality of one or more state or local governments. (3) The National Railroad Passenger Corporation (Amtrak) and any commuter authority. *See also private entity.*

**Public Health Service (PHS)**

An arm of the Department of Health and Human Services. It provides grants and loans for health care facilities, assists in the establishment and operation of emergency medical centers, addresses the occupational risks of federal employees, and is concerned with public health issues.

**Public Inland Waterways Transport (IWT) Enterprise**

Inland Waterways Transport (IWT) enterprise which is principally owned (more than 50 percent of the capital) by the state or public authorities and their enterprises.

**public interest**

Something in which the public, the community at large, has some pecuniary interest, or some interest by which their legal rights or liabilities are affected.

**public lands**

Under the Federal Land Policy and Management Act of 1976: Any land and interest in land owned by the United States within the several States and administered by the Secretary of the Interior through the Bureau of Land Management, without regard to how the United States acquired ownership. Exceptions are lands located on the Outer Conti-

ental Shelf; and lands held for the benefit of Indians, Aleuts, and Eskimos.

**public liability**

Liability for bodily injury or property damage and includes liability for environmental restoration.

**public liability insurance**

Insurance liability protection against claims arising out of the insured person's property, conduct, or the conduct of his/her agent(s). *See also insurance.*

**public notice**

The counterpart of Notice to Mariners promulgated by the Corps of Engineers. Also called *navigation bulletin*. *See also Notice to Mariners.*

**public road**

Any road under the jurisdiction of and maintained by a public authority and open to public travel.

**public school transportation**

Transportation by school bus vehicles of school children, personnel, and equipment to and from a public elementary or secondary school and school-related activities. *See also school bus.*

**public street and highway lighting**

Includes electricity supplied and services rendered for the purpose of lighting streets, highways, parks, and other public places or for traffic or other signal system service, for municipalities or other divisions or agencies of state or federal governments.

**public transit**

Passenger transportation services, usually local in scope, that are available to any person who pays a prescribed fare. It operates on established schedules along designated routes or lines with specific stops and is designed to move relatively large numbers of people at one time.

**public transit agencies**

A public entity responsible for administering and managing transit activities and services. Public transit agencies can directly operate transit service or contract out for all or part of the total transit service provided.

**public transit system**

An organization that provides transportation services owned, operated, or subsidized by

any municipality, county, regional authority, state, or other governmental agency, including those operated or managed by a private management firm under contract to the government agency owner.

**public transportation**

Transportation by bus, rail, or other conveyance, either publicly or privately owned, which provides to the public general or special service on a regular and continuing basis. Also known as *mass transportation*, *mass transit*, and *transit*.

**public trust**

A legal doctrine at common law or in state constitutions imposing a duty on the government to manage a resource (usually water or waterfront but possibly park land) for the greater good of the public, much like a trustee of a trust.

**public use airport**

An airport open to and for public use without prior permission, and without restrictions within the physical capacities of available facilities. May or may not be publicly owned.

**public use Class I road**

A principal road/rural parkway which constitute the main access route, circulatory tour, or thoroughfare for visitors.

**public use Class II road**

A connector road which provides access within an area of scenic, scientific, recreational or cultural interest, such as overlooks, campgrounds, etc. *See also overlook access.*

**public use Class III road**

A special purpose road which provides circulation within public use areas, such as campgrounds, picnic areas, visitor center complexes, concessionaire facilities, etc. These roads generally serve low-speed traffic and are often designed for one-way circulation.

**public use Class IV road**

A primitive road.

**public use road**

All roads that are intended principally for the use of visitors for access into and within the public use area included. This includes all roads that provide vehicular passage for visitors, or access to such representative park areas as point of scenic or historic interest, campgrounds, picnic areas, lodge areas, etc.

County, state, and U.S. numbered highways maintained by the National Park Service are included in this category for purposes of functional classification.

**public vessel**

A vessel owned and operated by a government and not regularly employed in merchant service.

**public water system**

A system that provides piped water for human consumption to at least fifteen service connections or regularly serves twenty-five individuals.

**public way**

Any public street, road, boulevard, alley, lane, or highway, including those portions of any public place that have been designated for use by pedestrians, bicycles, and motor vehicles.

**publicly owned airport**

An airport which is publicly owned and under control of a public agency.

**publicly owned treatment works (POTW)**

A waste treatment works owned by a state, unit of local government, or Indian tribe, usually designed to treat domestic wastewater.

**publico**

Passenger vans or Class C motor buses operating with fixed routes but no fixed schedules. Publicos are privately owned and operated mass transit services which are market oriented and unsubsidized, but regulated through a public service commission, state or local government. Publicos are operated under franchise agreements; fares are regulated by route; and there are special insurance requirements. Vehicle capacity varies from eight to thirty or more, and the vehicles may be owned or leased by the operator.

**Pulfrich effect**

A binocular visual phenomenon occurring when differing amounts of light are admitted to the two eyes and a pendulum swung in a plane perpendicular to the line of sight appears to move in an elliptical path having depth.

**pull-down menu**

A vertical menu which is displayed from the top of the display following the pressing of an appropriate key or selection button and which disappears on a selection being made, the



pressing of another key, or the release of the selection button.

**pull down on**

*Maritime Navigation.* Channel report term used in crossings and meaning that when tow is well over, i.e., two-thirds of the way across, swing the vessel's head down on a new designated mark.

**pull down shape of bend**

*Maritime Navigation.* Channel report term meaning to steer into and around the shape of the bend at an easy distance off.

**pull on down**

*Maritime Navigation.* To change the vessel's course to a point further downstream.

**pull the pin**

*Transit.* To release the fifth wheel lock.

**pulmonary**

Pertaining to the lungs.

**pulmonary edema**

Abnormal, diffuse, extravascular accumulation of fluid in the pulmonary tissues and air spaces of the lungs.

**pulmonary emphysema**

See *emphysema*.

**pulmonary fibrosis**

Progressive fibrosis of the pulmonary alveolar walls with steadily progressive difficult or labored breathing.

**pulmonary function test (PFT)**

Test carried out to determine the capacity and health status of a person's lungs.

**pulmonary hyperinflation syndrome**

An overdistension and rupture of the lung by expanding gases during a decrease in environmental air pressure. Also known as *burst lung*.

**pulmonary ventilation**

The volume of gases which move into and out of the lungs per unit time.

**pulpwood trailer**

A trailer that is designed exclusively for harvesting logs or pulpwood and constructed with a skeletal frame with no means for attachment of a solid bed, body, or container, and with an arrangement of air control lines and reservoirs designed to minimize damage in off-road operations.



*A pulp wood trailer being prepared for over-the-road transport*

**pulse**

(1) A brief, large deviation from a signal baseline. (2) A detectable peripheral measure of a heart beat, as felt through the walls of the arteries. What is usually meant by "pulse" is the pulsation felt in the radial artery at the wrist. Other sites of pulsation include the side of the neck (carotid artery), the elbow (brachial artery), the temple (temporal artery), the anterior side of the hip bone (femoral artery), the back of the knee (popliteal artery) and the instep (dorsalis pedis artery). Contrary to common supposition, what is felt is not the blood pulsing through the arteries but a shock wave that travels along the fibers of the arteries as the heart contracts. This shock wave is generated by the pounding of the blood as it is ejected from the heart under pressure. It is analogous to the hammering sound heard in steam pipes as the steam is admitted into the pipes under pressure. A pulse in the veins is too weak to be felt, although sometimes it is measured by sphygmograph and the tracing obtained is called a *phlebogram*. See also *blood pressure, diastolic, and systolic*.



*The arterial pulse pressures (diastolic and systolic) are most commonly measured at the brachial artery*



**pulse code modulation (PCM)**

A type of waveform encoding for communications in which an analog signal is electronically sampled at a certain rate, quantified to a specified level, then binary encoded.

**pulse duration**

That period of time from the onset of a pulse to the signal return to baseline or within some percentage of the pulse height from the baseline.

**pulse pressure**

The difference between the systolic and diastolic blood pressure readings.

**pulse shape**

The waveform exhibited by a pulse

**pump out facility**

A holding place where a ship's bilge and cargo are pumped.

**pumped sample**

See *active sampling*.

**pumping station**

Mechanical devices installed in sewer or water systems or other liquid-carrying pipelines that move the liquids to a higher level. Also referred to as *lifting station*.

**pumping system**

*Lasers*. Method which is employed to raise the energy level of electrons in the lasing medium. Includes optical, electrical, chemical, and others.

**puncture**

(1) The piercing of an organ or other body structure with a hollow needle for the withdrawal of fluid or the removal of tissue for microscopic study. (2) A wound made by a pointed instrument.

**punishment**

Any fine, penalty, or confinement inflicted upon a person by the authority of the law and the judgment and sentence of a court, for some crime or offense committed by him/her, or for his/her omission of a duty required by law.

**punitive**

Relating to punishment. Having the character of punishment or penalty or inflicting punishment or penalty.

**punitive damage**

That compensation awarded to a victim by a court as a means of punishing an entity for wrongdoing or negligence. See also *damage and compensatory damage*. Also referred to as *exemplary damages*.

**pup**

*Transit (slang)*. A short semitrailer used in combination with a dolly and another semitrailer to create a twin trailer.

**pupil**

The variable opening in the iris of the eye through which light travels into the interior of the eye.

**pupillary muscles**

Those smooth circular and radial muscles of the iris which determine pupil diameter, the pupillary sphincter, and pupillary dilator muscles, respectively.

**pupillometry**

The measurement of the eye pupil size.

**purchase**

To buy goods, materials, services as well as maintain the necessary recordkeeping to support that activity.

**purchase or lease**

With respect to vehicles, means the time at which an entity is legally obligated to obtain the vehicles, such as the time of contract execution.

**purchased transportation**

Transportation service purchased by a public agency from a public or private provider on the basis of a written contract.

**purchasing**

The organization or department responsible for buying goods, materials, and services.

**pure accident**

*Law*. Implies that an accident was caused by some unforeseen and unavoidable event over which neither party to the action had control, and excludes the idea that it was caused by carelessness or negligence of the defendant. Synonymous with *unavoidable accident*.

**pure research**

See *basic research*.

**pure tone**

Sound characterized by a single frequency. A sound wave, the instantaneous sound pressure

of which is a simple sinusoidal function of time. A sound wave characterized by its single frequency and whose waveform is that of a sine-wave.

**purging**

(1) The displacement of one material with another in process or other equipment. (2) The initial step in adjusting the atmosphere of a confined space to acceptable standards either by displacing the air in the space with a fluid or vapor (inert gas, water, steam), or by carrying out forced-air ventilation.

**purity**

A measure or indication of the lack of contamination in a signal or substance.

**Purkinje effect**

A decreased sensitivity of the human eye to light of longer wavelengths as illumination decreases proportionately across the spectrum. Also called the *Purkinje shift* and *Purkinje phenomenon*.

**purple boundary**

That straight line interconnecting the termini of the spectrum locus in a chromaticity diagram.

**purpura**

Disorders characterized by purplish or brownish red discoloration of the skin, resulting from hemorrhage into the tissue. The hemorrhage is under the skin and through the mucous membranes, and produces spontaneous ecchymoses (bruises) and petechiae (small red patches) on the skin. The disorder is accompanied by a marked decrease in circulating platelets and hence is sometimes called thrombocytopenic purpura. There are two general types of purpura: primary or idiopathic purpura, in which the cause is unknown, and secondary or symptomatic purpura, which may be associated with exposure to drugs or other chemical agents, systemic diseases such as anemia and leukemia, diseases affecting the bone marrow or spleen, and infectious diseases such as rubella (German measles).

**pursuit tracking**

A task in which the subject is required to maintain the position of some object on or within certain limits of a moving target.

**pursuitemeter**

Any equipment designed to involve tracking a moving point or region for measuring eye-hand coordination.

**pus**

A thick fluid composed of viable and necrotic polymorphonuclear leukocytes, with necrotic tissue debris partially liquefied by enzymes liberated from the dead leukocytes, and other tissue breakdown products, characteristically produced in infections due to certain bacteria.

**push-pull hood**

A hood consisting of an air supply system on one side of the contaminant source blowing across the source and into a mechanical exhaust ventilation hood positioned on the opposite side.

**pushbutton**

A small control device which operates using short-travel, in-and-out linear movement, usually intended for operation by a finger.

**pushed barge inland waterways transport**

Freight vessel which is designed to be pushed and does not have its own means of mechanical propulsion.

**pushed tanker barge**

Pushed barge for the bulk transport of liquids or gases.

**pushed-towed barge inland waterways transport**

Freight vessel which is designed to be either pushed or towed and does not have its own means of mechanical propulsion.

**push-towed tanker barge**

Pushed-towed barge for the bulk transport of liquids or gases.

**pusher tug**

Powered vessel developing not less than 37 kilowatt (kW) and designed or fitted for the towing of dumb barges, pushed-towed barges, or rafts, and for the pushing of pushed and pushed-towed barges, but not for the carriage of goods.

**pusher vessel**

Powered vessel developing not less than 37 kW and designed or fitted for the pushing or pushed or pushed-towed barges but not for the carriage of goods.

**pustule**

A circumscribed, pus-containing lesion of the skin.

**put away**

Any activity which involves removing a work item, tools, or other materials from the workplace.

**put away time**

That time required to perform a put away function.

**put on the air**

*Transit (slang).* To apply the brakes.

**put on the iron**

*Transit (slang).* To put on tire chains.

**putlog**

A scaffold member upon which the platform rests.

**putrescible**

Able to rot quickly enough to cause odors and attract flies.

**psychrometric wet-bulb temperature**

See *wet-bulb temperature*.

**PVA**

See *positive vorticity advection*.

**PVC**

See *polyvinyl chloride*.

**P-wave**

*Seismology.* The fastest of seismic waves, and thus the first to arrive at a location following an earthquake (the P stands for primary). This is a compression body wave (particle movement is parallel to the direction of propagation of the wave). Its speed is 5.5 to 7.2 km/sec in the crust and 7.8 to 8.5 km/sec in the upper mantle.

**PWC**

See *physical work capacity*.

**PWL**

Sound pressure level.

**PWR**

Pressurized water reactor.

**pyknic**

A Kretschmer somatotype having the characteristics of rounded contours, large body cavities, and a large amount of body fat. See also *Kretschmer somatotype*.

**pyramid**

(1) *General.* An ancient structure of precise geometric proportions, generally used to entomb royalty. (2) *Anatomy.* One of two large, bilateral efferent neural fiber tracts on the posterior brain stem which innervates many of the skeletal muscles.

**pyramidal system**

That motor system comprised largely of neurons originating in the cerebral cortex, with their axons passing along the posterior brainstem without an intervening synapse to the spinal cord, and which is involved in rapid voluntary body movements. Also referred to as the *corticospinal system*.

**pyrheliometer**

Instrument for measuring the intensity of solar radiation.

**pyridine**

A coal tar compound used chiefly as a solvent. It is the parent of many naturally occurring organic compounds.

**pyrolysis**

Decomposition of a chemical by extreme heat.

**pyrometer**

An instrument for measuring or recording temperature above the range of a mercury thermometer.

**pyrophoric**

(1) Refers to materials that ignite spontaneously in the presence of sufficient oxygen. (2) Capable of igniting spontaneously on contact with air at or below 130 degrees Fahrenheit.

**pyrotechnics**

(1) An explosive device. (2) Any combustible or explosive compositions or manufactured articles designed and prepared for the purpose of producing audible or visible effects which are commonly referred to as *fireworks*.

Vincoli, Jeffrey W. "Q-Z"

*Lewis' Dictionary of Occupational and Environmental Safety and Health*

Edited by Jeffrey W. Vincoli

Boca Raton: CRC Press LLC, 2000

# Q

## Q

Quantity or volume of air.

## Q factor

See *quality factor*.

## Q fever

An rickettsial infection often seen among meat and livestock handlers. Can be contracted by inhalation of dust particles that are infected with the infectious organism. The organisms are found in the hides of sheep and cattle. It is contagious between humans and its symptoms include sudden hay fever, chills, headache, muscle pain, and coughing.

## QA

See *quality assurance*.

## QC

See *quality control program* and *quality circle*.

## QLFT

Qualitative fit test.

## QNFT

Quantitative fit test.

## quack

A pretender to medical skill which he/she does not possess. One who practices as a physician or surgeon without adequate experience or due qualification.

## quad map

A topographic map with an approximate scale of one inch to 2,000 feet; shows physical features such as wetlands, water bodies, roadways, mines, and buildings.

## quadrant

(1) One-fourth of the circumference of a circle. (2) An angular dissection of ninety degrees. (3) One of the quarters created by two intersecting lines, roads, streets, vectors, etc. (4) One of four corresponding parts, or quarters, as of the surface of the abdomen or of the field of vision.

## quadrantanopia

Loss of vision in one fourth of the visual field.

## quadriceps

Having four heads.

## quadriceps femoris muscle

A muscle group on the anterior thigh consisting of four muscles which flex the hip and extend the knee: rectus femoris, vastus lateralis, vastus medialis, and vastus intermedius.



*Well-defined quadriceps femoris muscles of the anterior thigh*

## quadriplegia

A condition in which all four limbs are affected by paralysis.

## qualification

The possession by an individual of the qualities, properties, circumstances, natural or adventitious, which are inherently or legally necessary to perform a task, fill an office, or perform a duty or function.

## qualification tests

The required tests used to demonstrate that the design, manufacture, and assembly have resulted in hardware conforming to specification requirements.

## qualified

Adapted; fitted; entitled; susceptible; competent; fitting; possessing legal power or capacity; eligible. Applied to one who has taken the steps to prepare himself/herself for an appointment of office. One who is adequately and satisfactorily trained and/or experienced to perform a function or task.

## qualified handicapped individual

Under the Americans with Disabilities Act (ADA): A handicapped individual who is capable of performing a specific job with reasonable accommodation.

**qualified operator**

A worker having the adequate physical/mental attributes, training, education, and experience who has demonstrated that he/she is capable of safely performing a given task involving the operation of machinery or equipment with acceptable quality and quantity.

**qualified person**

One familiar with the construction and operation of the equipment and the hazards involved. *Note 1:* Whether an employee is considered to be a "qualified person" will depend upon various circumstances in the workplace. It is possible and, in fact, likely for an individual to be considered "qualified" with regard to certain equipment in the workplace, but "unqualified" as to other equipment. *Note 2:* An employee who is undergoing on-the-job training and who, in the course of such training, has demonstrated an ability to perform duties safely at his/her level of training and who is under the direct supervision of a qualified person is considered to be a qualified person for the performance of those duties.

**qualified worker**

A worker having the adequate physical/mental attributes, training, education, and experience who has demonstrated that he/she is capable of performing a given task using basic tools with acceptable quality and quantity.

**qualifying phase I technology**

Under the Clean Air Act (CAA): A technological system of continuous emission reduction which achieves a 90 percent reduction in emissions of sulfur dioxide from the emissions that would have resulted from the use of fuels which were not subject to treatment prior to combustion.

**qualimeter**

An instrument for measuring the quantity of roentgen rays generated by a Coolidge tube.

**qualitative**

The characteristic attributes or qualities pertaining to an exposure based on subjective information, nonrigorous quantitative data, and judgment.

**qualitative exposure assessment**

The identification of contaminants and physical agents an individual may be exposed to, and a judgment of the associated hazard based

on the frequency and duration of exposure, the control measures in effect (engineering, administrative, and personal protection), the properties of the stressor, and the manner in which it is being used/handled.

**qualitative risk assessment**

An examination of system risk based upon established criteria that allows the analyst to evaluate risk levels in relation to other risks or total system risk.

**quality**

A condition in which a product satisfies a set of requirements involving such aspects as strength, durability, function, appearance, and user-satisfaction.

**quality analysis**

An examination or study of product quality goals.

**quality assurance (QA)**

(1) A company-wide program that establishes project policies, procedures, standards, and guidelines designed to produce an acceptable level of professional quality. (2) A system of practices, procedures, and activities that are taken to provide assurance that the work being carried out will meet defined standards of quality. The assessment of the potential for a procedure to produce sampling results of adequate quality to satisfy the defined objectives. The primary purpose of a quality assurance program is to provide the necessary safeguards to minimize erroneous sample analyses and to provide a means of detecting errors when they occur.

**quality assurance project plan**

As per the Environmental Protection Agency (EPA): A plan that describes the policy, organization, functional activities, and quality assurance and quality control protocols necessary to achieve DQOs dictated by the intended use of the data (RI/FS Guidance).

**quality assurance/quality control**

According to the U.S. Environmental Protection Agency (EPA): A system of procedures, checks, audits, and corrective actions to ensure that all EPA research design and performance, environmental monitoring and sampling, and other technical and reporting activities are of the highest achievable quality.



**quality circle (QC)**

A small group of people involved in a similar type of work who voluntarily meet on a pre-determined schedule (e.g., weekly) on paid time in an attempt to identify, analyze, and solve some of the problems in their work environment. Also referred to as *quality control circles* and *employee participation team*.

**quality control chart**

A chart used for recording data regarding product quality.

**quality control (QC) programs**

Establish project activities that apply the policies, procedures, standards, training, guidelines, and systems developed in the QA program. QC programs aim to maintain an acceptable level of project quality through application of sound project management principles and practices.

**quality factor**

(1) *General*. A measure for expressing the rate of attenuation (sharpness) of time-varying energy as a function of frequency. Also referred to as *Q factor*. (2) *Ionizing Radiation*. A modifying factor that is used to derive the radiation dose equivalent from absorbed dose. It is a factor by which the absorbed radiation dose in rad is multiplied to obtain a quantity that expresses the biological effectiveness of the absorbed dose in rem. The factor for beta, gamma, and X-radiation is 1. For alpha particles and fast neutrons it is 10. Other values are used for neutrons of other energies and heavy recoil nuclei. (3) *Ionizing Radiation*. The number intended to represent the effectiveness of various types of ionizing radiation based on relative biological effectiveness or linear energy transfer, based on the following values:

X-ray, beta	1
protons, fast neutrons	10
alpha particles	20

**quantitation limit**

The lowest level at which a chemical may be accurately and reliably quantified. Usually equal to the detection limit multiplied by a factor of 3 to 5, but varies between chemicals and between samples.

**quantitative**

The property of anything which can be determined by measurement and expressed as a quantity.

**quantitative exposure assessment**

The procedure of quantitatively determining an individual's exposure to a health hazard, employing accepted sampling and analytical procedures, and assessing the likelihood that an adverse health effect may occur based on the sample results.

**quantitative risk assessment**

An application of statistical techniques to mathematically identify the level of probable risk associated with a given hazard, as it relates to total system operation.

**quantum**

The smallest quantity of energy, responding to the energy of electromagnetic radiation, that can be associated with a given phenomenon.

**quantum theory**

A theory based on the concept that energy is radiated intermittently in units of definite magnitude called quanta and absorbed in like manner.

**quarantine**

(1) A place or period of detention of ships coming from infected or suspected ports. (2) Restrictions placed on entering or leaving premises where a case of communicable disease exists. (3) The application of measures to prevent contact between persons who are not infected and persons suspected of being infected.

**quarrel**

An altercation, angry dispute, or an exchange of recriminations, taunts, threats, or accusations between two persons.

**quart**

One-fourth of a gallon (946 cc).

**quartan**

(1) Recurring in 4-day cycles (every third days). (2) A variety of intermittent fever of which the paroxysms recur on every third day. *See also malaria*.

**quarter**

The fourth part of anything, especially a year.

**quarter line**

A line used to set a boat out where maneuverability is limited.

**quarter section**

The quarter of a section of land according to the divisions of a government survey, determined by dividing the section into four equal parts by north and south and east and west, and containing 160 acres (a quarter of a square mile of land).

**quartile**

The value of the boundary at the 25th, 50th, or 75th percentile of a frequency distribution divided into four parts, each containing a quarter of the population.

**quartz**

One of the forms of crystalline silicon dioxide. Also referred to as one of the forms of free silica.

**Quaternary**

The period of geologic time starting 1.6 million years ago and continuing to the present day. It is divided into two epochs: the Pleistocene and the Holocene, with the division between these two falling approximately 10,000 years before the present. *Late Quaternary* refers to time between 700,000 years ago and the present day. *Pre-Quaternary* refers to any time before 1.6 million years ago.

**quaternary**

(1) Fourth in a series. (2) Made up of four elements or radicals.

**Queckenstedt's test**

When the veins in the neck are compressed on one or both sides there is a rapid rise in the pressure of the cerebrospinal fluid of healthy persons, and this rise quickly disappears when pressure is taken off the neck. But when there is a block in the spinal canal the pressure of the cerebrospinal fluid is affected little or not at all by the maneuver.

**quench tank**

A water-filled tank used to cool incinerator residues or hot materials during industrial processes.

**Quervain's disease**

Inflammation of the long abductor and short extensor tendons of the thumb, with swelling and tenderness.

**questioning technique**

A method for analyzing and attempting to improve work processes, generally by asking questions such as: a) what is the purpose for some activity, b) why is a particular sequence followed, c) why does a particular person perform that job, and d) is the method being used to accomplish the task the best possible.

**questionnaire**

A written set of questions intended to obtain an individual's responses on his/her attitudes, issues, etc.

**queue**

(1) Place a discrete unit in position for sequential flow in a single processing channel. (2) A location from which units may be selected for processing when processing time or other requisite conditions permit.

**queuing theory**

A quantitative rule describing the patterns pertaining to arrivals, service times, and the sequence in which arrivals are handled.

**quick disconnect valve**

(1) *Breathing Apparatus*. A device which starts the flow of air by inserting of the hose (which leads from the facepiece) into the regulator of self-contained breathing apparatus, and stops the flow of air by disconnection of the hose from the regulator. (2) *Servicing and Maintenance*. A mechanical device, usually spring-loaded or under some type of mechanical tension, that allows for the quick connection and/or disconnection of two structures. Common in many industries, such as refining, aerospace, the military, etc.



*Quick disconnect valves used in the fueling of aircraft allow for quick and safe connection/disconnection of fuel hose lines*

**quicken**

(1) A display technique involving the use of time derivatives for aiding an operator in tracking or control operations involving motion. (2) The first perceptible movement of the fetus in the uterus, appearing usually in the sixteenth to eighteenth week of pregnancy.

**quinine**

A white, bitter alkaloid usually obtained from cinchona. An analgesic, antipyretic, bitter tonic, and effective antimalarial.

**quintivalent**

Pentavalent; having a valence of five.

**quinsy**

Acute suppurative inflammation of the tonsil and the surrounding tissue.

**quintan**

Recurring every 5 days (every fourth day).

**quorum**

A majority of the entire body. The number of members who must be present in a deliberative body before business may be transacted.

**quotidian**

(1) Recurring every day. (2) A form of intermittent malarial fever with daily recurrent paroxysms.

**quotient**

A number obtained by division.

**quotient verdict**

A verdict resulting from an agreement whereby each juror writes down the amount of damages to which he/she thinks a party is entitled and each amount is then added together and divided by the number of jurors.

**QWERTY keyboard**

A keyboard with a letter distribution pattern of QWERTY on the left side of the top row. *See also Dvorak keyboard.*

# R

## R

(1) Degrees Rankine. (2) See *electrical resistance*.

## R & D

See *research and development*.

## R meter

An instrument for measuring and displaying the intensity of ionizing radiation in roentgens.

## R value

See *thermal resistance value*.

## RA

See *remedial action*. See also *return air*.

## rabbit fever

See *tularemia*.

## rabies

An acute infectious viral disease communicated to man by the bite of an infected animal and affecting the brain and the nervous system. Rabies is transmitted by warm-blooded animals, especially dogs and foxes. The virus is often present in the saliva of affected animals and is transmitted chiefly through bite wounds and occasionally through open wounds or sores. After the virus enters the body it travels along the nerve trunk to the brain. The farther the bite is from the head, the longer it takes to reach the brain. The incubation period varies from 2 weeks to as long as 6 months. The bitten person must start treatment with antirabies vaccine and serum before the virus reaches the brain. The disease must be prevented because it is always fatal in man. Also called *hydrophobia*.

## RAC

See *risk assessment code*.

## race

(1) A breakdown of the human species by certain genetically determined characteristics such as skin color, bodily proportions, hair type, and stature. (2) A form of competition where the purpose is to complete a prescribed path or function with a minimal time or ahead of others in the competition.

## raceway

A channel designed expressly for holding wires, cables, or bus bars, with additional functions (as permitted in applicable codes and standards). Raceways may be of metal or insulating material, and the term includes rigid metal conduit, rigid nonmetallic conduit, intermediate metal conduit, liquid-tight flexible metal conduit, flexible metal conduit, electrical metallic tubing, under floor raceways, cellular concrete floor raceways, cellular metal floor raceways, surface raceways, wire ways, and bus ways.

## RACT

See *reasonably achievable control technology*.

## rad

See *radiation absorbed dose*.

## radappertize

To radiate food with ionizing radiation to sterilize it.

## radar

An acronym derived from Radio Detection and Ranging. A system using emitted and reflected electromagnetic energy, principally radio frequency and microwaves, to detect and track objects or weather.

## radar air traffic control facility (RATCF)

An air traffic control facility, located at a U.S. Naval or Marine Corps Air Station, utilizing surveillance, and normally, precision approach radar and air/ground communication equipment to provide approach control services to aircraft arriving, departing, or transiting the airspace controlled by the facility. The facility may be operated by the Federal Aviation Administration (FAA), the United States Navy (USN), the United States Marine Corp (USMC), or the FAA & USN and service may be provided for both civil and military airports.

## radar air traffic control tower

An airport traffic control tower that uses radar and nonradar capabilities to provide approach control services to aircraft arriving, departing, or transiting airspace controlled by the facility. It provides radar air traffic control services to aircraft operating in the vicinity of one or more civil and/or military airports in the terminal area.



*Radar air traffic control operations*

**radar altimeter**

Aircraft instrument that makes use of the reflection of radio waves from the ground to determine the height of the aircraft above the surface.

**radar approach control (RAPCON)**

An air traffic control facility, located at a U.S. Air Force (USAF) base, utilizing surveillance and, normally, precision approach radar and air/ground communication equipment to provide approach control services to aircraft arriving, departing, and transiting the airspace controlled by the facility. The facility may be operated by the Federal Aviation Administration (FAA), or the United States Air Force (USAF). Service may be provided to both civil and military airports.

**radar approach control tower**

An airport traffic control tower (ATCT) that uses radar and nonradar capabilities to provide approach control services to aircraft arriving, departing, or transiting airspace controlled by the facility. It provides radar Air Traffic Control (ATC) services to aircraft operating in the vicinity of one or more civil and/or military airports in the terminal area. In other words, a radar approach control tower is an ATCT at which airport traffic control specialists are permitted to provide radar approach control service, including extensive vectoring, as well as to handle takeoffs and landings. Radar acts can be separated into a control tower and a radar room.

**radar display**

The graphic presentation of a radar scan on a radarscope.

**radar dome**

A dome-shaped structure used to protect the antenna of a radar installation.

**radar reflector**

A device capable of or intended for reflecting radar signals.

**radarscope**

The CRT or other device used to project the scan of a radar beam for operator viewing.

**radial**

(1) Pertaining to the radius bone. (2) On a line directed outward from the center of a circle. (3) A type of tire usually constructed with steel belts for added puncture protection and durability.

**radial deviation**

A movement of the wrist such that the longitudinal axis of the hand is directed toward the lateral/radial/thumb side of the forearm.

**radial keratotomy**

A surgical procedure in which radial incisions are made in the cornea to improve myopic vision.

**radial nerve**

A spinal nerve innervating the upper arm, forearm, and the dorsal-thumb side of the hand. Also called *musculospiral nerve*.

**radiale**

The uppermost point on the lateral margin of the leading end of the radius bone.

**radiale height**

*See elbow height.*

**radiale – stylium length**

The linear distance from radiale to stylium parallel to the long axis of the freely hanging lower arm. Measured with the individual standing, the arm hanging naturally at the side, and the palm facing the thigh. Also referred to as *forearm length* and *lower arm length*.

**radian**

A planar angular measure in which the arc length of the subtended angle at the center of a circle equals the radius (approximately 57.3 degrees). *See also plane angle.*

**radiance (L)**

The value of the ratio of the radian flux to the solid angle and the perpendicular surface projection.

**radiant energy**

The energy of *electromagnetic waves* from sources such as radiowaves, visible light, infrared, x-rays, and gamma rays. These waves do not need molecules to propagate them, and in a vacuum they travel at nearly 300,000 kilometers per second.

**radiant exitance (M)**

The radiant flux density leaving a specified surface.

**radiant flux**

The rate of flow of radiant power which flows onto or through a unit area.

**radiant flux density**

That amount of radiant power which flows onto or through a unit area.

**radiant heat**

A form of electromagnetic energy.

**radiant heat load**

Energy that is transformed into heat when it strikes an object. The human body can both emit and receive radiant energy.

**radiant heat temperature**

The temperature of an object as a result of it having absorbed radiant energy.

**radiant heat transfer**

Radiant heat transfer occurs when there is a large difference between the temperatures of two surfaces that are exposed to each other but are not touching.

**radiant heating**

That heating which occurs solely by radiation.

**radiation**

(1) Divergence from a common center. (2) A structure made up of diverging elements, especially a tract of the central nervous system made up of diverging fibers. (3) Electromagnetic waves. The emission and propagation of energy in the form of waves or corpuscular emissions of particles through space or through a material medium; for instance, the emission and propagation of electromagnetic waves, electric waves, or other forms of electromagnetic radiation, as well as ionizing radiation. Sources of radiation include natural or "background" radiation, such as cosmic rays from outer space, and the naturally occurring radioactive substances found in the earth. Manmade radiations result from arti-

cially produced nuclear reactions in stable elements which are then changed to radioactive substances. Radiations are particulate and nonparticulate; that is, that may be made up of particles such as neutrons and protons which are fragments of the nuclei of disintegrating atoms, or they may consist of electromagnetic waves, which have no mass. Particulate radiations may consist of alpha particles or beta particles. Most radioactive isotopes (radioisotopes) emit particulate radiations and at the same time also release electromagnetic rays (gamma rays). Both particulate and nonparticulate radiations are capable of penetrating and being absorbed into matter. Alpha particles are the least penetrating; beta particles slightly more penetrating; and the gamma rays, like x-rays, are capable of completely penetrating the body. Harmful effects of uncontrolled radiation exposure include serious disturbances of bone marrow and other blood-forming organs, burns, and sterility. There may be permanent damage to the germ plasm or genes, which results in genetic mutations. The mutations can be transmitted to future generations. Radiation also may produce harmful effects on the embryo or fetus, bringing about fetal death or malformations. Radiation also apparently shortens the life span of those exposed to it over a period of time, and predisposes persons to the development of cataracts. Exposure to large doses of radiation over a short period of time produces a group of symptoms known as the acute radiation syndrome. These symptoms include general malaise, nausea, and vomiting, followed by a period of remission of symptoms. Later, the patient develops more severe symptoms such as fever, hemorrhage, fluid loss, anemia, and central nervous system involvement. The symptoms then gradually subside or become more severe, and may lead to death.

**radiation absorbed dose (rad)**

The unit of absorbed dose which is equal to 100 ergs/g. It is a measure of the energy imparted to matter by ionizing particles per unit mass of irradiated material at the point of exposure.

**radiation accident**

Any accident exposing humans to excessive radiation or involving the spread of radioac-



tive materials beyond their intended containment.

**radiation area**

An area accessible to individuals, in which ionizing radiation levels could result in a person receiving a dose equivalent in excess of 5 millirem (equivalent to 0.05 mSv) in 1 hour at 12 inches (30 centimeters) from the source or from any surface that the radiation penetrates.

**radiation dosimetry**

A measurement of the amount of ionizing radiation exposure by individuals, materials, or equipment at a specific location.

**radiation effect**

Any of the documented effects from high levels of ionizing radiation exposure, such as hair loss, cancer, nausea, cataracts, or death. *See also* [radiation sickness](#).

**radiation fluence**

*See* [fluence](#).

**radiation fog**

Fog produced over land when radiation cooling reduces the air temperature to or below its dew point. It is also referred to as *ground fog* and *valley fog*.

**radiation hazard**

A situation in which persons might receive ionizing radiation in excess of the applicable maximum permissible dose or in which radiation damage might be done to materials.

**radiation inversion**

An increase in temperature with height due to radiation cooling of the earth's surface. Also called *nocturnal inversion*.

**radiation length**

The mean distance required to reduce the energy of charged particles by 1/e in passing through a material.

**radiation monitoring**

A form of environmental monitoring in which periodic or continuous measurements are taken to determine the radiation levels present in a specific environment.

**radiation protection**

Any measure to reduce the exposure of humans and/or equipment to radiation, whether through legislation, regulations, policies, or physical measures.

**radiation protection guide (RPG)**

The total amount of ionizing radiation dose over certain periods of time that may be permitted to persons whose occupation involves exposure to such radiation. It is equivalent to what was formerly called the *maximum permissible exposure (MPE)*.

**radiation protection officer (RPO)**

The person who has been selected and trained to be responsible for overseeing the ionizing radiation protection program in a facility. Also referred to as the *radiation safety officer* or *RSO*.

**radiation safety**

The study and/or implementation of equipment and procedures to prevent excessive radiation exposure to personnel or radiation release to the environment.

**radiation safety officer (RSO)**

*See* [radiation protection officer](#).

**radiation sickness**

A self-limiting syndrome characterized by nausea, vomiting, diarrhea, and psychic depression, following exposure to appreciable doses of ionizing radiation, particularly to the abdominal region. Also called *radiation syndrome*.

**radiation source**

Materials, equipment, or devices that generate or are capable of generating ionizing radiation including naturally occurring radioactive materials, byproduct materials, source materials, special nuclear materials, fission products, materials containing induced or deposited radioactivity, nuclear reactors, radiographic and fluoroscopic equipment, particle generators and accelerators, radio frequency generators such as certain klystrons and magnetrons that produce x-rays, and high voltage devices that produce x-rays.

**radiation standards**

Regulations that set maximum exposure limits for protection of the public from radioactive materials.

**radiation survey**

An evaluation of the radiation hazard incident to the production, use, release, disposal, or presence of a radioactive material or other sources of ionizing radiation under a specific set of conditions. Includes surveys necessary

to evaluate external exposures to personnel, surface contamination, and the concentration of airborne radioactive materials in the facility and in effluents from the facility, as appropriate.

**radiation syndrome**

See *radiation sickness*.

**radiation therapy**

The use of radiation to treat disease.

**radiator**

Any device which radiates energy.

**radical**

An ionic group having one or more charges, either positive or negative. A group of atoms which can enter into a chemical reaction but which is incapable of existing separately. See also *free radical*.

**Radio Automobile Communication System**

A Japanese government/private industry project to develop future street/highway vehicle systems.

**radio contact**

*Aviation.* The initial radio call-up to a flight service station by en route aircraft, which includes a complete interchange of information and a termination of the contact.

**radio frequency (Rf)**

Electromagnetic energy from 30 kHz to 300 GHz.

**radioactive**

A property of some materials or elements that is characterized by their spontaneous emission of radiation.

**radioactive contamination**

Contamination with radioactive material(s).

**radioactive decay**

The disintegration of the nucleus of an unstable nuclide by the spontaneous emission of charged particles and/or photons.

**radioactive decontamination**

The removal of contaminating radioactive materials from a given location.

**radioactive device**

See *radioactive equipment*.

**radioactive equipment**

Equipment or devices that generate, or are capable of generating, ionizing radiation including radiographic and fluoroscopic equip-

ment, particle generators and accelerators, radio frequency generators such as certain klystrons and magnetrons that produce x-rays, and high voltage devices that produce x-rays.

**radioactive half-life**

That time required for one-half the original amount of unstable nuclei in a radioactive sample to decay.

**radioactive material**

Materials that generate, or are capable of generating, ionizing radiation including naturally occurring radioactive materials, byproduct materials, source materials, special nuclear materials, fission products, materials containing induced or deposited radioactivity, and nuclear reactors.

**radioactive series**

A succession of nuclides, each of which transforms by radioactive disintegration into the next nuclide until a stable one results.

**radioactive substances**

Those substances that emit radiation.

**radioactive waste**

Waste which contains materials that are radioactive and which must be disposed according to regulatory requirements.

**radioactivity**

The spontaneous emission of radiation, generally alpha or beta particles often accompanied by gamma rays, from the nucleus of an unstable isotope. As a result, the radioactive isotope is converted (or "decays") into the isotope of a different element, which may or may not be radioactive. Ultimately, as a result of one or more stages of radioactive decay, a stable (non-radioactive) end product is formed. The property of radioactivity occurs naturally in a number of elements. In general, the chemical elements of atomic number above 83 are radioactive. Stable elements that are not naturally radioactive can be made so by bombarding isotopes of the element with high-velocity particles. When an element is unstable, whether naturally or artificially, the ratio of protons to neutrons in its atoms is uneven. Each atom attempts to achieve stability by giving off particles from its nucleus and thus it begins to disintegrate, releasing both nuclear particles and electromagnetic radiations. Since these radiations interact with matter, including the cells of the body, they

can be extremely harmful or, under proper control, extremely useful (in medical therapy, for example).

**radioactivity concentration guide (RCG)**

The maximum permissible amount of any specified radioisotope that may be allowed to accumulate in the body.

**radiobiology**

The study of radiation effects on living things. More specifically, the branch of science concerned with effects of light and of ultraviolet and ionizing radiations on living tissue or organisms.

**radiocarbon**

A radioactive isotope of carbon. The isotope of mass 14 ( $^{14}\text{C}$ ) is used in many diagnostic procedures and physiologic investigations. With a half-life of 5568 years, it has provided a means of determining the age of many ancient substances and articles.

**radiograph**

A picture of an object that is made by passing ionizing radiation through the object and photographic film positioned on the opposite side of the object from the radiation source.

**radiographer**

The individual who is in attendance at a site where ionizing radiation sources are being used and is the user or supervises their use in industrial radiographic operations. This individual is responsible for complying with regulations and adherence with good practice during the procedure.

**radiography**

The use of penetrating radiation such as x-rays, gamma rays, or neutrons, to make visual images of the insides of objects. An examination of humans or animals, or of the structure of materials by non-destructive methods, utilizing sealed sources of ionizing radiation or ionizing radiation-producing machines.

**radioisotope**

An unstable isotope of an element that disintegrates spontaneously, emitting ionizing radiation, and yielding a different isotope.

**radiological health**

The art and science of protecting humans, animals, and the environment from injury or damage from sources of ionizing radiation

and promoting better health through beneficial applications of sources of ionizing radiation.

**radiology**

The branch of medicine that deals with the diagnostic and therapeutic applications of radiant energy.

**radioluminescence**

The emission of visible light from ionizing radiation or the decay of radioactive isotopes causing the excitation of crystals or phosphors.

**radiometer**

An instrument used to demonstrate the transformation of radiant energy into mechanical energy.

**radiometric unit**

A unit of measurement for radiant electromagnetic energy in terms of energy or power, without regard to biological effects.

**radiometry**

The study or measurement of radiant energy.

**radionuclide**

Radioactive element that is characterized in terms of its atomic mass and atomic number that can be made artificially or can be naturally occurring. They have potentially mutagenic effects on the human body.

**radiosensitive**

Term used in describing tissues that are more easily damaged as the result of exposure to ionizing radiation.

**radiosonde**

A balloon-borne instrument that measures and transmits pressure, temperature, and humidity to a ground-based receiving station.

**radiotherapy**

Treatment of ailments by the application of doses of ionizing radiation from various sources. The purpose of radiotherapy is to deliver a definite amount of radiation to a specific location. The prescribed dosage should be sufficient to treat a lesion, but not great enough to damage permanently the normal tissue surrounding the lesion. Radiotherapy is often used in conjunction with surgical treatment or with drugs and/or a combination of both, especially in the treatment of cancer.

**radium**

A chemical element, atomic number 88, atomic weight, 226, symbol Ra. Radium is highly radioactive and is found in uranium minerals. Radium salts emit, in addition to heat and light, three distinct kinds of radiation (alpha, beta, and gamma rays) and also a radioactive gas called radon.

**radius**

(1) The linear distance from the center of a circle to its edge. (2) The lateral forearm bone.

**radius of curvature**

The radius of a circle whose arc matches a curve or surface at a given point.

**radius of vulnerable zone**

The maximum distance from the point of release of a hazardous substance in which the airborne concentration could reach the level of concern under specified weather conditions.

**radon**

(1) A chemical element formed by the disintegration of radium 226 or radium 224; a heavy, colorless, odorless and radioactive gas. (2) An inert gaseous element formed by radioactive decay of radium atoms in soil or rocks.

**radon daughters**

See *radon progeny*.

**radon decay products**

A term used to refer collectively to the immediate products of the radon decay chain. These include Po 218, Pb 214, Bi 214, and Po 214, which have an average combined half-life of about thirty minutes.

**radon progeny**

A term referring collectively to the intermediate products produced in the radon decay chain. Also called *radon daughters*.

**raffinate**

In solvent extraction, it is that portion of the mixture which remains undissolved and not removed by the solvent.

**rafter sample**

A sample of settled dust that is obtained from a rafter or other undisturbed surface that will contain representative particulates that have settled out of the air. The sample must be

representative of the airborne dust to which personnel are exposed.

**rag top**

*Transit (slang)*. Open top trailer covered with a tarpaulin.

**rags**

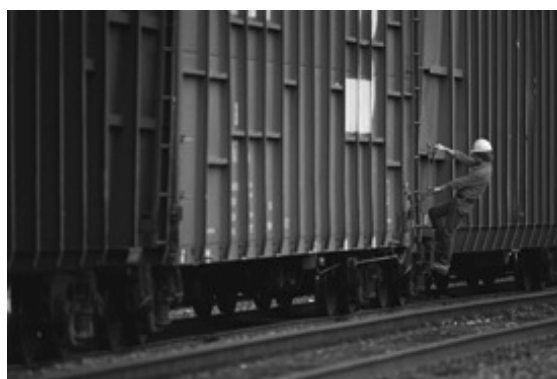
*Transit (slang)*. Bad tires.

**rail**

A rolled steel shape laid in two parallel lines to form a track for carrying vehicles with flanged steel wheels. See also *locomotive, railway, railroad, and train*.

**rail car**

A car designed to carry freight or non-passenger personnel by rail, and includes a box car, flat car, gondola car, hopper car, tank car, and occupied caboose. See also *railway car*.



*Typical rail car used for hauling freight*

**rail-highway grade crossing**

A location where one or more railroad tracks cross a public highway, road, or street or a private roadway, and includes sidewalks and pathways at or associated with the crossing. See also *grade crossings and highway-rail crossing*.

**rail joint bond**

*Railroad*. A metallic connection attached to adjoining rails to insure electrical conductivity.

**rail ladder**

A fixed ladder consisting of side rails joined at regular intervals by rungs or cleats and fastened in full length or in sections to a building, structure, or equipment.

**rail mode**

Consists of freight and passenger (including commuter) railroads. *See also rapid rail, rapid transit rail, transit mode, transit railroad, and transit railway.*

**railbus**

A relatively light, diesel-powered, two-axle rail vehicle with a body resembling that of a bus.

**railing**

A vertical barrier erected along exposed sides of stairways and platforms to prevent falls of persons. The top member of a railing usually serves as a handrail.

**railroad**

(1) A person engaged in transportation by rail.  
(2) All forms of non-highway ground transportation that run on rails or electro-magnetic guide ways, including a) commuter or other short-haul rail passenger service in a metropolitan or suburban area, and b) high speed ground transportation systems that connect metropolitan areas, without regard to whether or not they use new technologies not associated with traditional railroads. Such term does not include rapid transit operations within an urban area that are not connected to the general railroad system of transportation.  
(3) Any surface transportation system that carries passengers, goods, materials, or property over rails. *See also locomotive, rail, railway, and train.*

**railroad accident**

An event arising from the operation of a railroad which, with minor exceptions results in one or more of the following circumstances:  
a) Any impact between railroad on-track equipment and an automobile, bus, truck, motorcycle, bicycle, farm vehicle, pedestrian, or other highway user at a highway-rail crossing. b) Any collision, derailment, fire, explosion, act of God, or other event involving the operation of railroad on-track equipment, standing or moving, which results in more than \$6,300 in damages to railroad on-track equipment, signals, track, track structures, and roadbeds. c) Any event arising from the operation of a railroad which results in the death of one or more persons; an injury to one or more persons (other than railroad employees) requiring medical treatment. d) An injury to one or more employees which requires medical treatment; or results in re-

striction of work or motion for one or more days, or one or more lost work days, transfer to another job, termination of employment, loss of consciousness or any occupational illness of a railroad employee as diagnosed by a physician.

**railroad and railway electric service**

Electricity supplied to railroads and interurban and street railways, for general railroad use, including the propulsion of cars or locomotives, where such electricity is supplied under separate and distinct rate schedules.

**railroad car mile**

A single railroad car moved a distance of one mile.

**railroad crossing collision**

A collision between on-track railroad equipment at a point where tracks intersect.

**railroad switching and terminal**

A company primarily performing switching service, furnishing terminal trackage, bridges, or other facilities such as union freight stations, operating ferries, or performing any one or a combination of these functions. It may coincidentally conduct a regular freight or passenger service.

**railroad switching and terminal establishments**

Establishments primarily engaged in the furnishing of terminal facilities for rail passenger or freight traffic for line-haul service, and in the movement of railroad cars between terminal yards, industrial sidings, etc. Terminal companies do not necessarily operate any vehicles themselves, but may operate the stations and terminals.

**railway**

A permanent way having one or more rails which provides a track for trains. *See also locomotive, rail, railroad, and train.*

**railway car**

A railway car designed to carry freight, railroad personnel, or passengers. This includes boxcars, covered hopper cars, flatcars, refrigerator cars, gondola cars, hopper cars, tanker cars, cabooses, stock cars, ventilation cars, and special cars. It also includes on-track maintenance equipment. *See also rail car.*

**railway gauge**

Distance between the rails of a track.



Railway

**railway yard**

An area provided with a system of tracks and associated structures, where railway trains are assembled, and railway cars are switched, stored, or serviced.

**rain**

Precipitation in the form of liquid water drops that have diameters greater than that of drizzle.

**rain cap**

A sheet-metal fixture which is placed on the outlet of a stack/vent for preventing rain from entering. Also called a *weather cap*.

**rain shadow**

The region on the leeward side of a mountain where the precipitation is noticeably less than on the windward side.

**rainbow**

An arc of concentric colored bands that spans a section of the sky when rain, fog, or water spray is present and the sun is positioned at the observer's back. The colors are those of the spectrum and are visible due to sunlight

passing through and refracted by the airborne water molecules.

**rainbow passage**

A paragraph of text, which when read, results in the reader making a wide range of facial movements. This reading can be used for the talking phase of the respirator fit test protocol.

**raking collision**

*Rail Operations.* A collision between parts or a consist on an adjacent track, or with a structure such as a bridge.

**rales**

Abnormal sounds in the respiratory system indicating some type of pathological condition.

**RAM**

See *random access memory*.

**ramp**

(1) An inclined roadway connecting roads of differing levels. (2) A lightly sloped surface which serves as a mobility aid for handicapped individuals or movement of goods to a different height or level, usually adjacent to a set of steps or stairs.

**ramp metering**

(1) The process of facilitating traffic flow on freeways by regulating the amount of traffic entering the freeway through the use of control devices on entrance ramps. (2) The procedure of equipping a freeway approach ramp with a metering device and traffic signal that allow the vehicles to enter the freeway at a predetermined rate.

**ramus**

(1) The posterior, vertical portion of the mandible. (2) A branch, as of a nerve, vein, or artery.

**rancid**

Refers to a musty, rank taste or smell that is usually associated with fats that have undergone decomposition.

**Rand formula**

An agreement under which employees pay dues to a union without being required to join the union.

**random**

Not deterministic. A variable whose value at a particular future instant cannot be predicted exactly.



**random access memory (RAM)**

*Computing.* High-speed memory that holds a copy of the operating system, any programs that are currently running on a computer, and any information that is being processed. RAM is temporary memory; all information in RAM is lost when the user turns off the computer. RAM is resident memory, measured in bytes or megabytes, of a computer system that enables and facilitates most of the system's base functions as well as some higher level operating functions. It is memory located in the semiconductor chips in the computer, not on the hard disk. The more RAM, the more programs can be run at the same time and the faster the programs will run.

**random errors**

Errors which are the result of uncontrollable or unknown sources. They are the result of variation, due to chance, that occurs in monitoring despite the effort to control all variables. They are characterized by the random occurrence of both positive and negative deviations from the mean, and these tend to cancel out if the sample size is sufficient.

**random noise**

An oscillation whose magnitude is not specified and cannot be predicted with certainty for any given instance of time.

**random process**

A collection of all possible sample functions which might be produced by random phenomena.

**random sample**

A sample that has been collected in such a manner that each individual in the population represented by the sampled individual had an equal probability of being sampled. This concept can be applied to personnel, work areas, work shifts, dates, etc. The objective in collecting a random sample is to obtain a sample which is free of bias.

**random signal**

See *random process*.

**random variable**

A real function whose value is determined randomly. Also referred to as *chance variable* and *stochastic variable*.

**randomize**

To select or assign randomly.

**randomized design**

An experimental design in which the subjects are assigned randomly to groups representing different conditions or levels of the independent variable.

**range**

(1) *General.* The distance between two extremes (e.g., the high point and the low point). (2) *Instrumentation.* The upper and lower limits between which an instrument responds and over which the instrument is calibrated. The interval between the upper and lower measuring limits of an instrument.

**range-bearing display**

See *B display*.

**range of motion (ROM)**

The spatial extent through which a combination of joints, limbs, or links can be normally moved.

**rank**

(1) To place a set of scores or other numeric variables in rank order. (2) The location of a score in a set of rank-ordered scores. (3) The maximum number of linearly independent rows in a matrix.

**rank order**

A sequence in which objects are organized sequentially by their quantitative score on some descriptor, variable, or parameter.

**rank order correlation**

Any non-parametric correlation test for significance between at least ordinal-level paired observations in a random sample.

**Rankine (R)**

A temperature scale with zero F at 460° Rankine. The freezing point of water on this scale is 491.6°R and the boiling point is 671.7°R.

**ranking crew member**

*Rail Operations.* An individual in whom the general charge of the train or yard crew is vested in accordance with the railroad's operating rules. Unless otherwise designated by the railroad, the ranking crew member will be the assigned locomotive engineer.

**RAPCON**

See *radar approach control*.

**RAPF**

Recommended assigned protection factor.

**rapid eye movement (REM)**

Any short, quick movement of the eyes, especially that occurring during the rapid eye movement phase of sleep.

**rapid eye movement sleep**

That phase of sleep during which the eyeballs can be observed to move rapidly and the EEG resembles an awake, alert state. Typically thought to be involved with dreaming.

**rapid rail**

A subway-type transit vehicle railway operated on exclusive private rights-of-way with high-level platform stations. Rapid rail also may operate on elevated or at grade-level track separated from other traffic. *See also rail mode, rapid transit rail, transit mode, transit railroad, and transit railway.*

**rapid transit**

Rail or motorbus transit service operating completely separate from all modes of transportation on an exclusive right-of-way.

**rapid transit rail**

Transit service using rail cars driven by electricity usually drawn from a third rail, configured for passenger traffic and usually operated on exclusive rights-of-way. It generally uses longer trains and has longer station spacing than light rail. *See also rail mode, rapid rail, transit mode, transit railroad, and transit railway.*

**rapids**

An area of broken, fast flowing water in a stream, where the slope of the bed increases (but without a prominent break of slope which might result in a waterfall), or where a gently dipping bar of harder rock outcrops.

**rapture of the deep/depths**

*See nitrogen narcosis.*

**rarefaction**

The momentary reduction in pressure during the trough in a sound wave.

**rasp**

A machine that grinds waste into a manageable material and helps prevent odor.

**raster display**

A video- or CRT-type display in which the screen is written in a standard, preprogrammed sequence.

**ratbite fever**

Either of two distinct diseases (Haverhill fever and sodoku) that may be transmitted to man by the bite of an infected rat and, less commonly, by the bite of an infected squirrel, weasel, dog, cat, or pig.

**RATCF**

*See radar air traffic control facility.*

**ratchet**

*Marine Operations.* A heavy turnbuckle with cork-screw threads and midships handle, equipped with pelican hooks on both ends for the purpose of rapidly tightening up wire lashings holding the barges of a tow together. It is widely used on the rivers.

**rate**

(1) The frequency at which a certain event or circumstance occurs within a specified or commonly understood time period. (2) The quantity of output produced, expressed as either per unit time or percent of capacity/normal. (3) *See speed.* (4) *See wage rate and piece rate.* (5) To judge the relative or absolute amount of some quality of an entity or process, using some scale or other basis.

**rate change**

(1) Any alteration in a production time or output standard. (2) Any alteration in worker compensation, whether time based or output based.

**rate control**

The ability to adjust a controlling device as a function of changes in the velocity of a continuously moving object or pattern. Also referred to as *first-order control* and *velocity control*.

**rate cutting**

An arbitrary reduction in the incentive pay rate or scale.

**rate of decay**

*Acoustics.* The time rate at which the sound pressure level decreases at a given point and at a given time after the source is turned off.

**rate determination**

The study and analysis to decide what a standard time or incentive pay rate should be.

**rate of closure**

The rapidity with which different pieces of information can be integrated into a meaningful pattern. The pattern is initially unknown.

**rate-regulated pipelines**

The pipelines included in these segments are all federally or state rate-regulated pipeline operations, which are included in the reporting company's consolidated financial statements. However, at the reporting company's option, intrastate pipeline operations may be included in the U.S. Refining/Marketing Segment if a) they would comprise less than 5 percent of U.S. Refining/Marketing Segment net property plant & equipment (PP&E), revenues, and earnings in the aggregate; and b) if the inclusion of such pipelines in the consolidated financial statements adds less than \$100 million to the net PP&E reported for the U.S. Refining/Marketing Segment.

**rate setting**

The establishment of standard time values or any monetary pay scale for a given operation, based on a rate determination.

**rated activity sampling**

A more detailed activity sampling in which a rating is determined for each work element to establish the work content in addition to that time occupied by delays and other activities.

**rated average element time**

See *normal element time*.

**rated load**

The maximum static load or force that can be imposed on the part or structure at any time during its intended operation and expected environment.

**rated maximum continuous augmented thrust**

With respect to turbojet engine type certification, means the approved jet thrust that is developed statically or in flight, in standard atmosphere at a specified altitude, with fluid injection or with the burning of fuel in a separate combustion chamber, within the engine operating limitations established under Part 33 of the Federal Aviation Regulations, and approved for unrestricted periods of use.

**rated maximum continuous thrust**

With respect to turbojet engine type certification, means the approved jet thrust that is developed statically or in flight, in standard atmosphere at a specified altitude, without fluid injection and without the burning of fuel in a separate combustion chamber, within the engine operating limitations established under

Part 33 of the Federal Aviation Regulations, and approved for unrestricted periods of use.

**rated takeoff augmented thrust**

With respect to turbojet engine type certification, means the approved jet thrust that is developed statically under standard sea level conditions, with fluid injection or with the burning of fuel in a separate combustion chamber, within the engine operating limitations established under Part 33 of Federal Aviation Regulations, and limited in use to periods of not over 5 minutes for takeoff operation.

**rated takeoff thrust**

With respect to turbojet engine type certification, means the approved jet thrust that is developed statically under standard sea level conditions, without fluid injection and without the burning of fuel in a separate combustion chamber within the engine operating limitations established under Part 33 of the Federal Aviation Regulations, and limited in use to periods of not over 5 minutes for takeoff operation.

**rating**

(1) A statement that, as a part of a certificate, sets forth special conditions, privileges, or limitations. (2) That class or level at which an operator is qualified. (3) That assessment of a worker's pace or output relative to the standard pace or output.

**rating factor**

That level of skill and effort displayed by an operator during the period of study, based on 100% as normal skill and effort.

**rating of perceived effort (RPE)**

An individual's estimate of how hard a task is, in terms of very, very light to very, very hard. Also known as *rate of perceived exertion*, *rated perceived exertion*, and *rating of perceived exertion*. See also *rating of perceived exertion scale*.

**rating of perceived effort scale**

A 15-point scale ranging from 6 to 20 which is used by an individual to report the amount of effort/exertion he/she is putting forth. Also referred to as the *Borg scale* and *perceived exertion scale*. See also *rating of perceived effort*.

**rating scale**

Any rank ordering scale for recording worker performance.

**ratio**

A mathematical relationship between two numerical variables or values in which they are expressed as a fraction (as A/B) and may be evaluated as a quotient.

**ratio-delay study**

A study in which a large number of instantaneous work samples are taken randomly.

**ratio estimate**

The ratio of two population aggregates (totals). For example, "average miles traveled per vehicle" is the ratio of total miles driven by all vehicles, over the total number of vehicles. *See also estimate ratio and mean.*

**ratio scale**

A basic measurement scale meeting the criteria of an equal-interval scale and in which a known valid zero exists such that the ratio of numerical measures can be interpreted as a ratio of their magnitudes.

**rational basis test**

Under this test, an appellate court will not second-guess the legislature as to the wisdom or rationality of a particular statute if there is a rational basis for enactment, and if the challenged law bears a reasonable relationship to the attainment of some legitimate governmental objective.

**rationalization**

A defense mechanism in which a person finds logical reasons (justification) for his/her behavior while ignoring the real reasons. It is a form of self-deception and is unconsciously employed to make tolerable certain feelings, behaviors, and motives that would otherwise be intolerable. Everyone employs rationalization at some time or other and in most instances it is a relatively harmless behavior pattern. The danger lies in deceiving oneself habitually so that eventually harmful or destructive behavior can be justified in one's mind. Also, when investigating an accident or incident, witnesses may tend to rationalize as time passes. Therefore, the earlier a witness interview can take place following an accident event, the better the chance of obtaining more usable testimony.

**rattening**

An offense on the part of the members of a trade union involving the taking away and/or hiding of the tools, clothes, or other property of a worker in an attempt to compel him/her to join the union or cease working. In England, it is an offense punishable by fine or imprisonment.

**Raub scale**

*See computer anxiety scale.*

**ravine**

- (1) A long, deep, and narrow hollow in the earth, worn by a stream or torrent of water.
- (2) A long, deep, and narrow hollow or pass through the mountains.

**raw agricultural commodity**

According to the Federal Food, Drug, and Cosmetic Act: Any food in its raw or natural state, including all fruits that are washed, colored, or otherwise treated in their unpeeled natural form prior to marketing.

**raw material**

An unprocessed material or material which has undergone some preliminary processing elsewhere which is used as input to a processing operation.

**raw sewage**

Untreated wastewater.

**rawinsonde observation**

A radiosonde observation that includes wind data.

**ray tracing**

The calculation of a light ray path through an optical system.

**Rayleigh disk**

A thin, lightweight, circular disk made of sound-reflective material which is mounted at 45° to the incident sound and used to determine sound wave particle velocity from the torque induced on the disk.

**Raynaud's syndrome**

A vascular disorder resulting in the constriction of the blood vessels of the hands due to cold temperature, emotions, vibration, or unknown cause. The hands become a bluish-white color due to lack of blood circulation and become painful upon exposure to cold. It is associated with the operation of hand-held or manually supported or guided machines

that produce intense vibration in the frequency range of 10 to 1000 Hz. Symptoms include pain in the fingers, loss of manual dexterity, stiffness in the joints, radiographically observable changes in the bones and joints, whitening and numbness in one or more fingers of either hand, skin atrophy, and occasionally gangrene. Also referred to as *Raynaud's disease*, *dead hands*, and *vibration white-hands disease*.

**RBC**

Red blood cell.

**RBE**

See *relative biological effectiveness*.

**RC**

See *room criterion curve*.

**RCC**

See *rescue coordination center*.

**RCF**

Refractory ceramic fiber.

**RCG**

See *radiation concentration guide*.

**RCO**

See *remote communications outlet*.

**RCRA**

See *Resource Conservation and Recovery Act*.

**RCRA/HWDMS**

RCRA Hazardous Waste Data Management System; includes selective information on over 324,000 sites which generate, transport, store, treat, and/or dispose of hazardous waste as defined by RCRA. Records available in HWDMS will eventually be transferred to the RCRIS database.

**RCRIS**

Resource Conservation and Recovery Information System.

**rd**

See *rutherford*.

**RD**

See *remedial design*.

**RDA**

See *recommended daily allowance*.

**Re number**

See *Reynold's number*.

**reach**

(1) A straight-line anthropometric measure taken along the longitudinal axis of a body extremity. (2) The capability of achieving a certain point in space through any self-directed orientation of limbs. (3) A work element involving the use of any combination of flexion, extension, or other joint movements to attain a point in space for some operation. (4) A certain area of a river, usually a straight section.

**reach envelope**

The volume or solid bounded proximally by the body, clothing surface, or proximal reach and by the distal boundary in any direction which an individual or robotic device can attain by any combination or postures, rotations, flexion, and/or extension movements under specified conditions.

**reach from wall, maximum**

The distance from a wall to the tip of the middle finger. Measured with the individual's back and the contralateral shoulder pressed against the wall, the shoulder of the arm being measured held as far forward as possible, with the arm and hand extended horizontally.

**reaction time**

The time required for a person to react to a stimulus.

**reaction time delay**

A time factor used in the modeling of man-machine systems to simulate the human reaction to an event.

**reactionless tool**

Any tool which compensates internally for forces or torques induced as a result of its actions such that there is essentially no external force or torque applied to the user.

**reactive**

Materials which by themselves or in contact with water or other non-compatible materials are readily capable of detonation, explosive decomposition or explosive reaction at normal temperatures and pressures, as well as those materials that are sensitive to mechanical or localized shock at normal temperatures and pressures.

**reactive muffler**

*Acoustics*. A type of muffler used to reduce noise emissions from an engine, such as that from an automobile exhaust system.

**reactivity**

A measure of the tendency to undergo a chemical change or reaction with the release of energy. It is the susceptibility of materials to release energy.

**read-out**

A meter reading or other form for displaying visual information to an individual. *See also call-out.*

**read the water**

To navigate by visual observation of the water surface; not recommended for newcomers.

**readability**

A quality of text or numbers which allows groups of related alphanumeric characters to be easily discerned and recognized as words or number sequences.

**readily accessible**

Capable of being reached quickly for operation, renewal, or inspections, without requiring those to whom ready access is required to climb over or remove obstacles or to resort to portable ladders, chairs, etc. *See also accessible.*

**readiness potential**

A change in cortical potential in the motor cortex just prior to a planned, volitional movement.

**readiness time**

That period of time necessary for a system to be prepared from a specified, inactive state to a state in which it is stabilized and can perform its intended function.

**reading point**

*See breakpoint.*

**reading radius**

The distance from the front of the eyeball to the object or display to be read.

**reading speed**

The number of words of text read per minute by an individual.

**reagent**

A substance that produces a chemical reaction that can be used to detect, measure, or produce another substance.

**reagent blank**

Materials used in sample analysis are evaluated as reagent blanks to determine their contribution, if any, to the analytical result.

**real ear attenuation at threshold (REAT)**

A methodology for determining the attenuation provided by a hearing protection device fitted in a prescribed manner on a group of normal wearers.

**real-ear protection at threshold**

The mean value in decibels of the occluded threshold of audibility (hearing protector in place) minus the open threshold of audibility (ears open and uncovered) for all listeners on all trials under otherwise identical test conditions.

**real time**

(1) *General.* Having essentially no perceptible delay between the occurrence of an event and the knowledge of the event at another location. Also, having a control system which delivers the necessary inputs to the system being controlled at or prior to the times they are required. (2) *Instrumentation.* An instrument that responds to and indicates a contaminant concentration or level of a physical agent as changes are occurring.

**realistic job preview (RJP)**

A pre-employment description or new-employee orientation in which accurate and precise information about the job is related to the individual.

**realizable**

Pertaining to a component or system which is physically manufactured, not merely theoretical.

**realization rate**

That proportion or percentage of actual annual hours worked by all employees in a workplace or company compared to the planned or expected normal annual hours to be worked.

**rear axle capacity**

The factor and/or Society of Automotive Engineers (SAE) recommended maximum load that a rear axle assembly is designed to carry as rated at the ground and expressed in pounds.

**rear end collision**

(1) A collision in which one vehicle collides with the rear of another vehicle. (2) A collision in which the trains or locomotives involved are traveling in the same direction on the same track. (3) A collision of the front of



one vehicle with the rear of another vehicle. Also called *rear-end*.

**rear extremity**

*Transit.* The rearmost point on a vehicle when the vehicle's cargo doors, tailgate, or other permanent structure are positioned as they normally are when the vehicle is being driven. Non-structural protrusions such as tail lights, hinges, and latches are deleted from the determination of the rearmost point.

**rear overhang**

*Transit.* The distance from the center of the rear axle to the end of the frame.

**rear projection**

Pertaining to a display which is presented to one side of a translucent screen for viewing from the other side.

**rearrange tow**

*Maritime.* To shift barges in tow.

**reasonable accommodation**

Under the Americans with Disabilities Act (ADA), that modification to the workplace or other environment which enables a qualified handicapped individual to work in a given situation and does not impose an undue hardship on an employer.

**reasonable act**

Such as may fairly, justly, and reasonably be required of a party.

**reasonable and probable cause**

Such grounds as to justify anyone suspecting another person of a crime, and placing him or her in custody based on those grounds. It is a suspicion founded upon circumstances sufficiently strong to cause a reasonable person to believe that a charge is true.

**reasonable care**

*Law.* Such a degree of care, precaution, or diligence as may fairly and properly be expected or required, having regard to the nature of the action, or of the subject matter, and the circumstances surrounding the transaction. It is such care as an ordinary prudent person would exercise under the conditions existing at the time he/she is called upon to act. Substantially synonymous with *ordinary care* or *due care*. It should be noted that a "high degree of care" is not the legal equivalent of reasonable care. It is that degree of care which a very cautious, careful, and prudent person

would exercise under the same or similar circumstances; a degree of care commensurate with the risk of danger. *See also ordinary care.*

**reasonable cause**

A basis for arrest without warrant exists when the facts would lead a person of ordinary care and prudence to believe and conscientiously entertain an honest and strong suspicion that the person subject to the arrest is guilty of committing a crime. *See also reasonable and probable cause.*

**reasonable compensation**

The sum which would reasonably compensate a person for injuries, for pain and suffering, and for past, present, and future expenses reasonably necessary or incidental to his/her efforts to alleviate injuries and all pecuniary losses suffered, or to be suffered, as a result of an inability to engage in his/her usual occupation.

**reasonable diligence**

OSHA's expectation that an employer is liable for conditions or practices which should reasonably have been known of and/or taking preventive actions. OSHA believes employers have an affirmative duty to monitor its workplace safety and become knowledgeable of all hazards that may be present there.

**reasonable doubt**

The standard used to determine the guilt or innocence of a person criminally charged. To be guilty of a crime, one must be proved guilty "beyond a reasonable doubt." Reasonable doubt which will justify acquittal is doubt based on reason and arising from evidence or lack of evidence, and it is doubt which a reasonable man or woman might entertain, and it is not fanciful doubt, is not imagined doubt, and it is not doubt that a juror might conjure up to avoid performing an unpleasant task or duty. Reasonable doubt is such doubt as would cause a prudent person to hesitate before acting in matters of importance to themselves. It is doubt based on reason which arises from evidence or lack of evidence.

**reasonable force**

That degree of force which is not excessive and is appropriate in protecting oneself and/or one's property. When such force is used, a

person is justified and is not criminally liable, nor is he/she liable in tort.

**reasonable grounds**

Reasonable grounds within a statute authorizing an arrest without a warrant by an officer who has reasonable grounds for believing that a person to be arrested has committed a criminal offense means *substantially probable cause*.

**reasonable man doctrine**

The standard which one must observe to avoid liability for negligence is the standard of the reasonable man under all circumstances, including the foreseeability of harm to another person (such as a plaintiff).

**reasonably available control technology (RACT)**

The lowest emissions limit that a particular source is capable of meeting by the application of control technology that is both reasonably available, as well as technologically and economically feasible. RACT is usually applied to existing sources in nonattainment areas and in most cases is less stringent than new source performance standards.

**REAT**

See *real ear attenuation at threshold*.

**reboot**

*Computing.* The act of restarting a computer by reloading the operating system. You can reboot some computers by pressing the RESET button. On all personal computers, the user can reboot or "warm boot" by pressing the CTRL+ALT+DEL keys on the keyboard (press all keys at the same time).

**rebuild**

A complete repair of a component with the objective of returning it as nearly as possible to its original and/or performance characteristics.

**rebuilt caboose**

A caboose that has undergone overhaul which has been identified by the railroad as a capital expense under Interstate Commerce Commission accounting standards.

**rebuilt locomotive**

A locomotive that has undergone overhaul which has been identified by the railroad as a capital expense under Interstate Commerce Commission accounting standards.

**rebuilt passenger car**

A passenger car that has undergone overhaul which has been identified by the railroad as a capital expense under Interstate Commerce Commission accounting standards.

**rebuttable presumption against registration (RPAR)**

See *special review*.

**recall**

(1) A statement by a manufacturer or distributor of some item that it may have one or more defects and should be returned for replacement or repair. (2) To access information stored in memory and output that information.

**receiver**

A device on a locomotive, so placed that it is in position to be influenced inductively or actuated by an automatic train stop, train control, or cab signal roadway element.

**receiver coil**

Concentric layers of insulated wire wound around the core of a receiver of an automatic train stop, train control, or cab signal device on a locomotive.

**receiver operating characteristic (ROC)**

A graphical presentation of detector performance in signal detection theory, including the combined effects of sensitivity and response bias on operator performance. See also *signal detection theory*.

**receiving**

That organization or those activities involved in the receipt and distribution within the plant of raw materials, equipment, and supplies from external sources.

**receiving waters**

A river, lake, ocean, stream, or other watercourse into which wastewater or treated effluent is discharged.

**recency error**

An error due to recent events which bias a rating or other measure. Also called *recency of events error*.

**receptacle**

(1) *General, Electrical.* A contact device installed at the outlet for the connection of a single attachment plug. (2) *Single Receptacle.* A single contact device with no other contact

device on the same yoke. (3) *Multiple Receptacle*. A single device containing two or more receptacles. (4) *Transit – Freight*. A containment vessel for receiving and holding materials, including any means of closing.

**receptacle outlet**

An outlet where one or more receptacles are installed.

**reception minimum altitude**

The lowest altitude at which an intersection can be determined.

**receptive field**

A region of the skin, retina, or other structure having an extended sensory apparatus within which appropriate stimulation affects the response of a given sensory neuron.

**receptor**

Binding site that has a high affinity for a particular ligand. Receptors interact with biologically endogenous ligands, facilitating intracellular communication. Many chemicals interact with receptors, producing a variety of toxic effects.

**recessed**

Pertaining to any device or object which is embedded, either entirely or in part, within another structure such that the device or object is still visible.

**recharge**

The process by which water is added to a zone of saturation, usually by percolation from the soil surface, e.g., the recharge of an aquifer.

**recharge area**

A land area in which water reaches to the zone of saturation from surface infiltration, e.g., an area where rainwater soaks through the earth to reach an aquifer.

**reciprocal color temperature**

A chromaticity measure which more nearly provides equal perceptible divisions of color temperature.

**reciprocating pedal**

A foot-operated device which operates as a member of a pair of pedals by moving in opposing directions about a common shaft with a rotational capability limited by the pedal radial motion.

**reckless endangerment**

A statutory offense committed by creating a substantial risk of death or serious injury to another.

**reckless homicide**

A species of statutory homicide in some states characterized by a willful and wanton disregard of consequences and resulting in death. In some states, it may amount to manslaughter.

**reckless misconduct**

A person is guilty of reckless misconduct when he/she intentionally does an act, or fails to do an act in violation of his/her duty, with knowledge of the serious danger to others involved in it or of facts which would disclose such danger to a reasonable person.

**reclamation**

The restoration of land, water, or waste materials to usefulness through methods such as sanitary landfill, wastewater treatment, or material recovery.

**Reclamation Act**

The Reclamation Act of 1902 authorized the Secretary of the Interior to locate, construct, operate, and maintain works for the storage, diversion, and development of waters for the reclamation of arid and semiarid lands in the Western States.

**reclining**

Pertaining to a posture involving an intermediate position between sitting and lying in which the posterior aspect of the body is against some reference surface, with the torso approximately between 45° and horizontal, and some degree of flexion of the hips and knees.

**recognition**

The process in which an observer interprets or computer process matches with data in memory the information available from a stimulus or object to arrive at a conclusion about the stimulus or object.

**recognition time**

That temporal interval required for a particular stimulus to be recognized.

**recognized hazard**

Any hazard declared by OSHA to be such, as well as any hazard known or suspected to exist within a workplace by management. This

concept of "recognized hazard" is a critical element in the OSHA compliance process, especially with regard to the employer's General Duty under Section 5(a)(1) of the OSHA Act. The contention is that a hazard must first be "recognized" as such before any attempts can be made to remove or control it. However, it must be clearly understood that ignorance of a hazard or hazardous condition does not elevate the responsibility to eliminate or control it. OSHA has clearly established a position that places this burden of knowledge directly on the employer. If the employer should have known or, with the practice of reasonable diligence, could have known about the hazard, then the employer is still required to and obligated to control or remove the hazard. *See also General Duty Clause.*

**recombinant bacterium**

A type of microorganism whose genetic makeup has been deliberately altered by introduction of new genetic elements.

**recombinant DNA (rDNA)**

The new DNA that is formed by combining pieces of DNA from different organisms or cells.

**recommended daily allowance (RDA)**

That amount of a specified mineral, vitamin, or other substance which is recommended for normal health.

**recommended exposure limit (REL)**

An occupational exposure limit recommended by NIOSH as being protective of worker health over a working lifetime.

**recommended maximum contaminant level (RMCL)**

The maximum level of a contaminant in drinking water at which no known or anticipated adverse affect on human health would occur, and which includes an adequate margin of safety. Recommended levels are non-enforceable health goals. *See* maximum contaminant level.

**recompression therapy**

The treatment for decompression sickness using a hyperbaric chamber to increase the ambient pressure.

**reconciling items**

Items where accounting practices vary for handling these expenses as a result of local

ordinances and conditions. Reconciling items include depreciation and amortization, interest payments, leases and rentals. They are called reconciling items because they are needed to provide an overall total that is consistent with local published reports.

**reconstructed source**

An existing facility in which components are replaced to such an extent that the fixed capital cost of the new components exceeds 50 percent of the capital cost that would be required to construct a comparable entirely new facility. New source performance standards may be applied to sources which are reconstructed after the proposal of the standard if it is technologically and economically feasible to meet the standard.

**record of decision (ROD)**

A public document that explains which cleanup alternative(s) will be used at National Priorities List sites where, under CERCLA, Trust Funds pay for the cleanup.

**recordable occupational injuries and illnesses**

Under OSHA 29 CFR 1904.12(c), any occupational injuries or illnesses which result in:

- a) fatalities, regardless of the time between the injury and death, or the length of the illness; or
- b) lost workday cases, other than fatalities, that result in lost workdays; or
- c) nonfatal cases without lost workdays which result in transfer to another job or termination of employment, or require medical treatment (other than first aid) or involve loss of consciousness or restriction of work or motion. This category also includes any diagnosed occupational illnesses which are reported to the employer but are not classified as fatalities or lost workday cases.

**recording thermometer**

A thermometer with a recording device used to obtain a permanent record of temperature.

**records retention policy**

A systematic procedure for the retention and destruction of an organization's documents. Retention periods may be driven by business considerations and not requirements of law. Failure to retain documents in the face of discovery in litigation can result in evidentiary

implications as well as creating a risk of criminal penalties. The policy is also part of the compliance program as government investigators will also check an organization's records to determine compliance with regulatory document retention requirements. *Also referred to as **document retention policy**.*

**recoverable light loss factor**

Any light loss factor due to conditions which can be remedied through activities such as maintenance, normal servicing, or cleaning, specifically including lamp burnout, lumen depreciation, luminaire dirt depreciation, and room surface dirt depreciation.

**recoverable resources**

Materials that still have useful physical, chemical, or biological properties after serving their original purpose and can, therefore, be reused or recycled for the same or other purposes.

**recoverable solid waste**

Under the Federal Solid Waste Disposal Act: The capability and likelihood of being recovered from solid waste for a commercial or industrial use.

**recovered resources**

Under the Federal Solid Waste Disposal Act: Material or energy recovered from solid waste.

**recovered solid waste material**

Under the Federal Solid Waste Disposal Act: Waste material and byproducts which have been recovered or diverted from solid waste.

**recovery efficiency**

The ratio, expressed as a percentage, of the amount of a material recovered from a sampling media to the amount placed on/in the media.

**recreational boat**

(1) Any vessel manufactured or used primarily for noncommercial use; leased, rented or chartered to another for the latter's noncommercial use. (2) Any vessel engaged in the carrying of six or fewer passengers.

**recruit**

To search for possible new employees.

**rectangular coordinate system**

A dimensional coordinate system composed of n perpendicular axes, where n is any posi-

tive integer value. Also referred to as *Cartesian coordinate system*.

**rectilinear**

Pertaining to a straight line.

**rectilinear motion**

That type of motion in which every point on a body moves in a straight line.

**rectilinear teleoperator**

A teleoperator having the capability for rectilinear motion, and which is usually restricted to that motion.

**rectum**

A segment of the large intestine just proximal to the anal canal.

**rectus abdominis muscle**

A voluntary skeletal muscle which has a vertical extent and is located over the abdomen just lateral to the midline of the body.

**recumbent anthropometry**

The taking or study of anthropometric measurements taken from the very young, disabled, or person in a lying, supine, or reclining posture, with the variations necessary to obtain or use the anthropometric measures.

**recumbent length**

The length of the body from the top of the head to the bottom of the heels. Measured with the individual lying on a flat, hard surface (e.g., a recumbent-length table), the head positioned such that the line of sight is vertical, the hips and knees fully extended, and the longitudinal axis of the feet vertical.

**recumbent-length table**

A hard, flat surface, which is wider than the shoulders, and which has a fixed headboard and a sliding/removable baseboard for measuring lengths while the subject is lying down.

**recycle/reuse**

The process of minimizing the generation of waste by recovering usable products that might otherwise become waste.

**recycled air**

That portion of the atmospheric gases retained in a ventilation system for recirculation.

**recycled material**

A material that is utilized in place of a primary, raw, or virgin material in manufacturing a product. They consist of consumer

waste, industrial scrap, materials from agricultural product waste, and others.

**recycled oil**

Under the Federal Solid Waste Disposal Act: Any used oil which is reused, following its original use, for any purpose (including the purpose for which the oil was originally used). Such term includes oil which is refined, reclaimed, burned, or reprocessed.

**recycling**

The reuse of materials ordinarily considered waste, whether hazardous or nonhazardous.

**red**

A primary color, corresponding to that hue apparent to the normal eye when stimulated with electromagnetic radiation approximately between wavelengths of 650 nm to 725 nm.

**red-blindness**

See *protanopia*.

**red blood cell (RBC)**

See *erythrocyte*.

**red border**

An EPA document that is undergoing final review before being submitted for final management decision.

**red marrow**

That type of marrow which produces certain types of blood cells, including erythrocytes.

**red muscle**

A skeletal muscle which appears in the fresh or living state, probably due to muscle hemoglobin and cytochrome, and which has a longer latency than white muscle.

**red-out**

A condition in which vision appears blurred by a red mist due to centripetal (negative g) accelerations.

**red tide**

A proliferation of a marine plankton that is toxic and often fatal to fish. This natural phenomenon may be stimulated by the addition of nutrients. A tide can be called red, green or brown, depending on the coloration of the plankton.

**redirect examination**

An examination of a witness by the direct examiner subsequent to the cross-examination of the witness.

**reduced comfort boundary**

A set of limits representing the maximum exposure time for whole-body vibration in different frequency ranges.

**reduction**

Used to indicate the slower output speed resulting from a ratio proportion (faster on reductions of less than 1). a) *Single Reduction*. A single set of reducing gears in the rear axle. b) *Double Reduction*. An additional gear-set in the rear axle to reduce output speed further. May or may not be used as a 2-speed rear axle.

**redundancy**

Providing devices to duplicate each other's functions in the event that one fails.

**redundant**

A situation in which two or more independent means exist to perform a function.

**reef**

A ridge of rocks lying near the surface of the sea, which may be visible at low tide, but is usually covered by water.

**reef area**

An area identified as a danger to maritime navigation containing one or more chains of rocks or coral, at or near the surface of the water.

**reef pool**

Pocket of sea/ocean completely surrounded by a coral reef.

**reefer**

*Transit (slang)*. Refrigerated truck or trailer designed for hauling perishables.

**reefing current**

Current where the swift water reaches the slack water and creates boils or continues boils or turbulent water. It is considered the edge of the reef or what would be a reef were one there.

**re-entrainment**

A situation that occurs when the air being exhausted from a building is immediately brought back into the system through the air intake and other openings in the building envelope.

**reentry**

A return to the work force or other aspect of society following a period of absence.



**reentry interval**

The period of time immediately following the application of a pesticide during which unprotected workers should not enter a field.

**referee fluid**

A compatible fluid, other than that used during normal system operations, that is used for test purposes because it is safer due to characteristics such as less (or non-) explosive, flammable, or toxic, and/or it is easier to detect.

**reference dose (RfD)**

Toxicity value *used* most often in evaluating noncarcinogenic effects resulting from exposures at Superfund sites. See specific entries for *chronic RfDs*, *subchronic RfDs*, and *developmental RfDs*.

**reference lot**

A lot consisting of selected components and used as a standard.

**reference man**

A hypothetical aggregation of human physical and physiological characteristics arrived at by international consensus. For example, the weight, height, and other physical dimensions are presented for what has been agreed to as the reference man. Also referred to as the *standard man*.

**referent power**

The ability of management to gain support for a project because personnel are personally attracted to the manager or interested in the project.

**referred pain**

A pain which is felt at one location, but which represents a disorder at another location.

**refined petroleum pipelines**

Establishments primarily engaged in the pipeline transportation of refined products of petroleum, such as gasoline and fuel oil.

**refined petroleum products**

Refined petroleum products include but are not limited to gasoline, kerosene, distillates (including No. 2 fuel oil), liquefied petroleum gas, asphalt, lubricating oils, diesel fuels, and residual fuels.

**reflectance**

A measure of the ratio of the luminance of a surface to the illumination on the surface.

**reflected glare**

That glare due to specular reflections from glossy or semi-glossy surface within the field of view.

**reflected light**

That light which leaves an object or surface from the illuminated side.

**reflection**

The process whereby a surface turns back a portion of the radiation that strikes it.

**reflection coefficient ( $\alpha_r$ )**

The ratio of the amplitude of a wave reflected from a surface or boundary to the amplitude of the wave incident on that surface or boundary. Also referred to as *coefficient of reflection*.

**reflective material**

A material conforming to Federal Specification L-S300, "Sheeting and Tape, Reflective; Non-exposed Lens, Adhesive Backing," (September 7, 1965) meeting the performance standard in either Table 1 or Table 1A of Society of Automotive Engineers (SAE) Standard J594f, "Reflex Reflectors" (January, 1977). See also *left bank*, *reflex reflector*, *retro-reflective material*, and *right bank*.

**reflectometer**

A photometer for measuring the reflectance of surface or materials.

**reflex**

(1) An innate biological stimulus-response mechanism. An automatic response to a given stimulus, depending only on the anatomic relations of the neurons involved. (2) A reflection. (3) Directed backward; produced by deflection of a nerve impulse that does not penetrate the level of consciousness.

**reflex angle**

An angle between 180° and 360°.

**reflex arc**

A neural chain consisting of a sensory receptor, an afferent neuron, an inter-neuron, a motor neuron, and an effector.

**reflex reflector**

A device which is used on a vehicle to give an indication to an approaching driver by reflected light from the lamps on the approaching vehicle. See also *reflective material*.

**reflexograph**

A chart recorder for displaying graphically the magnitude of a musculoskeletal reflex.

**reflexometer**

An instrument used to measure the force required to elicit a reflex.

**reflux esophagitis**

A burning sensation in the thorax, generally due to stomach acid refluxing through the lower esophageal sphincter. Commonly referred to as *heartburn*.

**reformulated gasoline**

(1) Gasoline whose composition has been altered in order to reduce evaporation and exhaust emissions that contribute to ozone formation. (2) Motor gasoline, formulated for use in motor vehicles, the composition and properties of which are certified as reformulated motor gasoline by the Environmental Protection Agency.

**refract**

Change the direction of an energy wave on passing from one medium to another in which the wave has a different velocity.

**refraction**

(1) *Illumination*. The bending of light as it passes from one medium to another. (2) *Acoustics*. The bending of a sound wave from its original path due to its passing from one medium to another, or due to a temperature or wind gradient. (3) *Anatomy*. Determination of the refractive errors of the eye and their correction by glasses.

**refractory period**

See *cellular refractory period*.

**refrigerant**

A substance that will absorb heat while vaporizing and whose boiling point and other properties make it useful as a medium for refrigeration.

**refueling track**

*Aviation*. Airspace designated for conducting aerial refueling.

**refuse**

See *solid waste*.

**refuse reclamation**

Conversion of solid waste into useful products, e.g., composting organic wastes to make

soil conditioners or separating aluminum and other metals for melting and recycling.

**regeneration**

Manipulation of individual cells or masses of cells to cause them to develop into whole plants.

**regional administrator**

A person appointed by the Administrator of the EPA for one of its several geographic regions.

**regional distribution port**

Waterfront area which a) is identifiable with a Standard Metropolitan Statistical Area (SMSA) as defined by the U.S. Bureau of Census, b) has 10 or more commercial terminal facilities located within a reasonable distance of the general area, c) is served by at least two Class I railroads, and d) is served by at least five interstate or U.S. highways.

**regional response team (RRT)**

Representatives of federal, local, and state agencies who may assist in coordination of activities at the request of the On-Scene Coordinator before and during a Superfund response action.

**register**

A fixture through which air is returned to a ventilation system. Also referred to as a *return air register*.

**register breadth**

*Maritime*. The breadth of a vessel at its widest part measured from the outer side of the planking or plating on one side to the corresponding point on the opposite side.

**register depth**

*Maritime*. The depth of a vessel measured from the underside of the tonnage deck, amidship, to the bottom of the hold. The depth is not the draft of a vessel.

**registered active general aviation aircraft**

A civil aircraft registered with the FAA that has been flown one or more hours during the previous calendar year. Excluded are aircraft owned and operated in regularly scheduled, non-scheduled, or charter service by commercial air carriers and aircraft in excess of 12,500 pounds maximum gross takeoff weight, and owned and operated by a commercial operator certificated by the FAA to engage in intrastate common carriage.

**registered aircraft**

Aircraft registered with the Federal Aviation Administration.

**registered inspector**

A person registered with the Department [of Transportation (DOT)] in accordance with 49 CFR 107 Subpart F who has the knowledge and ability to determine if a cargo tank conforms with the applicable DOT specification and has, at a minimum, any of the combinations of education and work experience in cargo tank design, construction, inspection, or repair set out in 49 CFR 171.8.

**registrant**

Any manufacturer or formulator who obtains registration for a pesticide active ingredient or product.

**registration**

Formal listing with EPA of a new pesticide before it can be sold or distributed in intra- or interstate commerce. The product must be registered under the Federal Insecticide, Fungicide, and Rodenticide Act. EPA is responsible for registration (pre-market licensing) of pesticides on the basis of data demonstrating that they will not cause unreasonable adverse effects on human health or the environment when used according to approved label directions.

**registration standards**

Published reviews of all the data available on pesticide active ingredients.

**Registry of Toxic Effects of Chemical Substances (RTECS)**

A five-volume NIOSH compilation listing the toxicity data of over 80,000 compounds.

**regression**

(1) *General*. Return to an earlier or primitive state. (2) *Statistics*. A statistical procedure which is employed to establish a relationship between two variables to enable the prediction of the values of one variable, Y (dependent variable), to those which correspond to given values of the other variable, X (independent variable). (3) *Medicine*. Subsidence of symptoms or of a disease process. (4) *Biology*. The tendency in successive generations toward mediocrity. (5) *Psychology*. A mental mechanism utilized to resolve conflict or frustration by returning to a behavior that was successful in earlier years.

**regression coefficient**

The weight or coefficient preceding each predictor variable in a regression equation.

**regression curve**

A graphic curve or an equation for a nonlinear function which may be used for predicting the value of an unknown variable from the known value of another.

**regression equation**

An equation in which the value of a criterion variable may be predicted from one or more known predictor variable values.

**regression line**

A graphic line or a linear equation representing a linear or approximately linear function which may be used for predicting the value of one variable from a set of known values.

**regression model**

The use of regression techniques to explain projections.

**regular course of business**

*Worker's Compensation*. The habitual or regular occupation that a party is engaged in, with the intent of winning livelihood or some gain, excluding incidental or occasional operations arising out of the transaction of the business.

**regular element**

A job element which is performed at least once in each work cycle or operation.

**regular grade gasoline**

A grade of unleaded gasoline with a lower octane rating (approximately 87) than other grades. Octane boosters are added to gasoline to control engine preignition or "knocking" by slowing combustion rates. *See also gasoline*.

**regular leaded gasoline**

Gasoline having an antiknock index (R+M/2) greater than or equal to 87 and less than or equal to 90 and containing more than 0.05 grams of lead or 0.005 grams of phosphorus per gallon. *See also gasoline*.

**regular sampling**

The continuous or intermittent (at a relatively fixed frequency) taking of a representative portion of the material being sampled.

**regular unleaded gasoline**

Gasoline having an antiknock index (R+M/2) greater than or equal to 85 and less than 88,

and containing not more than 0.05 grams of lead or 0.005 grams of phosphorus per gallon. See also *gasoline*.

**regularly employed driver**

A driver who, in any period of 7 consecutive days, is employed or used as a driver solely by a single motor carrier.

**regulated area**

Under many OSHA criteria, an area where exposure to a regulated airborne contaminant or physical stress agent is, or can be expected to be in excess of an OSHA permissible exposure limit.

**regulated motor carrier**

A carrier subject to economic regulation by the Interstate Commerce Commission.

**regulation**

(1) A rule of general application and future effect promulgated by an agency with jurisdiction. Distinguished from a *legislation* which is a statute or act of a legislature made up of elected representatives of the public. Federal regulations are codified in the Code of Federal Regulations (CFR). (2) Any agency statement of general or particular applicability designed to implement, interpret, or prescribe policy in order to carry out the purpose of a law. Synonymous with *rule*, it has the force of law.

**regurgitation**

Abnormal backward progression of fluids or other vessel contents, as the return of undigested food from the stomach to the oral cavity, or of blood through valves of the heart.

**rehabilitate**

Use one or more forms of treatment in an attempt to restore some or all loss of capacity or develop residual capabilities to give an individual a maximal state of independence.

**rehabilitation**

The process of restoring a person's ability to live and work as normally as possible after a disabling injury or illness. It aims to help the patient achieve maximum possible physical and psychologic fitness and regain the ability to care for himself/herself. It offers assistance with the learning or relearning of skills needed in everyday activities, with occupational training and guidance and with psy-

chologic readjustment. Rehabilitation is an integral part of convalescence.

**rehearsal**

The process of recycling information in working memory to maintain it within working memory or to store it in long-term memory.

**rehydration**

The restoration of water or fluid content to a body or to a substance that has become dehydrated.

**Reid vapor pressure (RVP)**

The vapor pressure of a liquid at 200°F, as determined by a standard laboratory procedure (ASTM Test D-23) and expressed in pounds per square inch absolute.

**Reid's base line**

An imaginary line defined by the location of the auricular point and the lowest point of the orbit on the same side of the head, with an anterior-posterior extent.

**REIL**

See *airport runway end identifier lighting*.

**reinforcement**

A meaningful reward or punishment after a response which results in a strengthening or weakening, respectively, of that response. See *positive reinforcement and negative reinforcement*.

**Reissner's membrane**

See *vestibular membrane*.

**Reiter's disease**

A disease of males marked by initial diarrhea followed by urethritis, conjunctivitis, and migratory polyarthritis and frequently accompanied by keratotic lesions of the skin.

**reject allowance**

A special time allowance provided a worker for processing rejects from a process or for rework.

**reject staging**

Reverse osmosis process configuration where the overflow water from one stage is used as feed water on subsequent stage to increase water recovery. Also called *brine staging*.

**rejection**

The immune reaction of the recipient to foreign tissue cells (antigens) after homograft transplantation, with the production of anti-

bodies and ultimate destruction of the transplanted organ.

## **REL**

See *recommended exposure limit*.

## **relapsing fever**

Any one of a group of similar infectious diseases transmitted to man by the bites of lice and ticks, and marked by alternating periods of normal temperature and periods of fever relapse. The diseases in the group are caused by several different species of spirochetes belonging to the genus *Borrelia*. Generally, relapsing fever starts with a sudden high fever of 104 to 105°F, accompanied by chills, headache, muscle aches, nausea, and vomiting. There may also be jaundice and a rash. The attack lasts 2 or 3 days, after which the symptoms disappear by crisis, with profuse sweating accompanying the rapid drop in temperature. In elderly people, this may be accompanied by collapse, in which the heart and respiratory system function poorly. After 3 or 4 days, there is a relapse and the symptoms return to their former severity. The cycle continues through four or more attacks before the disease has run its course. Relapsing fevers are rarely fatal, but they can be serious.

## **relationship**

An interdependence between individuals, activities, or entities.

## **relationship chart**

A table which details what the response for carrying out some task should be for several possible situations.

## **relationship diagramming**

The process of examining various plant layouts with the intent to optimize according to the closeness of relationships within an organization.

## **relative biological effectiveness (RBE)**

The ratio of the number of rads of gamma radiation or x-radiation of a certain energy that will produce a specified biological effect to the number of rads of another radiation required to produce the same effect. Typically, these are

- 1 X-rays, gamma rays, beta particles
- 2 thermal neutrons
- 10 fast neutrons, protons
- 20 alpha particles

## **relative humidity (RH)**

The amount of moisture in the air as compared with the maximum amount that the air could contain at the same temperature, expressed as a percentage. A relative humidity of 100% is about 2.5% total water vapor in air, by volume.

## **relative luminosity**

See *spectral luminous efficiency*.

## **relative maximum**

The highest value within a restricted region of a curve.

## **relative minimum**

The highest value within a restricted region of a curve.

## **relative mode**

An operational state in which cursor movement is a function of its original position.

## **relative standard deviation**

See *coefficient of variation*.

## **relative vorticity**

See *vorticity*.

## **relaxation allowance**

See *rest allowance*.

## **relaxed reach**

A reach which can be attained without having to strain or requiring maximal flexion and/or extension of limbs.

## **relayed cut-section**

*Rail Operations*. A cut-section where the energy for one track circuit is supplied through front contacts or through front and polar contacts of the track relay for the adjoining track circuit.

## **relearning time**

The time required for a previous user to re-achieve a previous level of competence following a period of non-use of skill or training.

## **release**

(1) *General*. To let go; to no longer hold or contend a claim of ownership over a particular thing. (2) *CERCLA*. Any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing of hazardous substances into the environment. SARA included in this definition the abandonment or discarding of barrels, containers, and other closed receptacles containing any hazardous

substances or pollutant contaminant. It excludes any release which results in exposure to persons solely within a workplace, with respect to a claim which such persons may assert against the employer of such persons; emissions from the engine exhaust of a motor vehicle, rolling stock, aircraft, vessel, or pipeline pumping station engine; or release of source, byproduct, or special nuclear material from a nuclear incident as those terms are defined in the Atomic Energy Act of 1954 if such release is subject to requirements with respect to financial protection established by the Nuclear Regulatory Commission.

**release load**

A work element in which an object is released.

**release rate**

Under the Federal Organotin Antifouling Paint Control Act of 1988: The rate at which organotin is released from an antifouling paint over the long term, as determined by the EPA Administrator using a) the American Society for Testing Materials (ASTM) standard test method which the EPA required in its July 29, 1986, data call-in notice on tributyltin compounds used in antifouling paints; or b) any similar test method specified by the Administrator.

**relevance tree**

A means of organizing and presenting inter-related variables or problems in graphic form for better visualization through the use of nodes and branches.

**relevant evidence**

Evidence tending to prove or disprove an alleged fact.

**reliability**

(1) *General*. An expression of the level of confidence that a given system or product will function, and continue to function, as intended throughout the life cycle. (2) *Instrumentation*. The ability of an instrument and its components to retain their operating performance characteristics over a reasonable period of use. A statistical term having to do with the probability that an instrument's repeatability and accuracy will continue to fall within specified limits. This is a very important characteristic for instruments which are to be used in field applications.

**reliability coefficient**

The correlation coefficient between two successive performance samples. Also called *coefficient* or *reliability*.

**reliability curve**

See *bathtub curve*.

**reliever airport**

An airport designated by the Secretary of Transportation as having the function of relieving current or forecast congestion at a commercial service airport and providing more general aviation access to the overall community.

**relocated threshold**

*Aviation*. A threshold located at a point on the runway other than the beginning of the runway pavement. The portion of pavement behind a relocated threshold that is not available for takeoff.

**rem**

See *roentgen equivalent man*.

**REM**

See *rapid eye movement*.

**remand**

The result or remedy in court litigation or an agency adjudicatory proceeding where the decision-maker sends the matter back to the agency or within the agency for the original decision to be reconsidered or reissued following proper procedures or standards.

**remanufactured vehicle**

A vehicle which has been structurally restored and has had new or rebuilt major components installed to extend its service life. See also *rebuild*.

**remedial action (RA)**

(1) The actual construction or implementation phase of a Superfund site cleanup that follows remedial design. (2) Those actions consistent with permanent remedy taken instead of or in addition to removal actions in the event of a release or threatened release of a hazardous substance into the environment, to prevent or minimize the release of hazardous substances so that they do not migrate to cause substantial danger to present or future public health or welfare or to the environment. (3) The actual construction or implementation phase of a Superfund site cleanup that follows remedial design.



**remedial design (RD)**

A phase of environmental remedial action that follows the remedial investigation/feasibility study (RI/FS) and includes development of engineering drawings and specifications for site cleanup.

**remedial investigation (RI)**

An in-depth study designed to gather the data necessary to determine the nature and extent of contamination at a Superfund site; establish criteria for cleaning up the site; identify preliminary alternatives for remedial actions; and support the technical and cost analyses of the alternatives. The remedial investigation is usually performed in tandem with the feasibility study, hence the acronym "RI/FS." *See also feasibility study.*

**remedial maintenance**

*See corrective maintenance.*

**remedial project manager (RPM)**

The EPA or state official responsible for overseeing remedial action at a site.

**remedial response**

A long-term action that stops or substantially reduces a release or threat of a release of hazardous substances that is serious but not an immediate threat to public health.

**remnant**

(1) That portion of raw material, part, or component remaining after some process. (2) That portion of an actual system output which is unaccounted for or unexplained by the system model. Usually refers to linear models.

**remote**

In terms of probability of hazard or mishap occurrence, a hazard or event whose occurrence during the life of an item is considered unlikely, but still possible.

**remote areas**

Sparsely populated areas such as mountains, swamps, and large bodies of water.

**remote cause**

In the law of negligence with respect to an injury or an accident, a cause which would not, according to experience of mankind, lead to the event which happened. One where the effect is uncertain, vague, or indeterminate, and where the effect does not necessarily follow.

**remote communications outlet (RCO)**

*Aviation.* Unmanned communications facility remotely controlled by air traffic personnel.

**remote control**

Control of a system from a remote and safe location.

**remote-control circuit**

Any electric circuit that controls any other circuit through a relay or an equivalent device.

**remote damages**

The unusual and unexpected result, not reasonably to be anticipated from an accidental or unusual combination of circumstances. A result beyond which the negligent party has no control.

**remote handling**

The transference of manipulative skills from the human operator to a more distant region via some electromechanical linkage.

**remote indicator**

An instrument or display for showing conditions at a point some distance away from the sensing device.

**remote monitoring**

*See telemetry.*

**remote operation**

The monitoring and/or control of a system performing some function at a distance from an operator or control center.

**removal action**

Short-term immediate actions taken to address releases of hazardous substances that require expedited response.

**removal costs**

Under the Federal Oil Pollution Act of 1990: The costs of removal that are incurred after a discharge of oil has occurred or, in any case in which there is a substantial threat of a discharge of oil, the costs to prevent, minimize, or mitigate oil pollution from such an incident.

**remove**

(1) Under CERCLA: The cleanup or removal of released hazardous substances from the environment, such actions as may be necessary to take in the event of the threat of release of hazardous substances into the environment, such as actions as may be necessary to moni-

tor, assess, and evaluate the release or threat of release of hazardous substances, the disposal of removed material, or the taking of such other actions as may be necessary to prevent, minimize, or mitigate damage to the public health or welfare or to the environment, which may otherwise result from a release or threat of release. (2) Under the Federal Oil Pollution Act of 1990: Containment or removal of oil or a hazardous substance from water and shorelines or the taking of other actions as may be necessary to minimize or mitigate damage to the public health or welfare, including, but not limited to, fish, shellfish, wildlife, and public and private property, shorelines and beaches. (3) Under the Federal Water Pollution Control Act: Containment and removal of the oil or hazardous substances from the water and shorelines or the taking of such other actions as may be necessary to minimize or mitigate damage to the public health or welfare, including, but not limited to, fish, shellfish, wildlife, and public and private property, shorelines and beaches.

**renal**

Related to or associated with the kidney.

**renege**

That customer or user behavior in which an individual leaves the queue or line after waiting for some period of time.

**renewable energy**

Energy obtained from sources that are essentially inexhaustible (unlike, for example, the fossil fuels, of which there is a finite supply). Renewable sources of energy include wood, waste, photovoltaic, and solar thermal energy.

**rental of railroad cars**

Establishments primarily engaged in renting or leasing railroad cars, whether or not also performing services connected with the use thereof, or in performing services connected with the rental of railroad cars.

**rep**

See *roentgen equivalent physical*.

**repair**

(1) *Systems*. To restore that which is inoperable or operable only at reduced capability to full capability by replacement of components, assemblies, or subsystems. (2) *Medical*. The physical or mechanical restoration of dam-

aged tissues, especially the replacement of dead or damaged cells in a body tissue or organ by healthy new cells.

**repeat**

To perform again.

**repeat rate**

The number of times a function is performed within a specified period of time. As with a keyboard key when continuously depressed and the number of characters which are input per second.

**repeat violation**

*OSHA*. As defined in case law, if the same standard has been violated more than once by the same employer and there is a substantial similarity of violative elements between current and prior violations, the violation will be consider "repeated."

**repeatability**

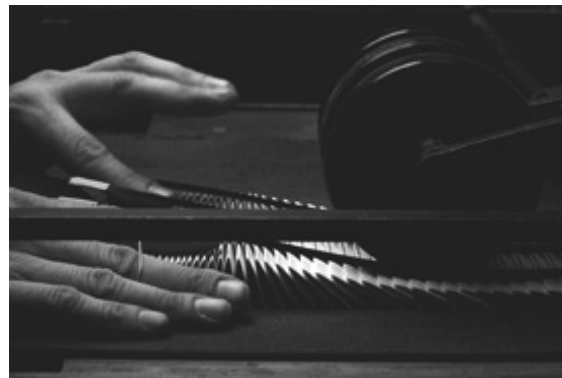
(1) *Instrumentation*. The ability of an instrument to reproduce readings repeatedly when sampling the same concentration. (2) *Sampling*. The closeness of agreement between samples that are collected simultaneously.

**repeated measures design**

An analysis of variance technique in which each subject is exposed to more than one condition.

**repetitive element**

See *regular element*.



*Repetitive motions, especially those which place the joints in awkward positions can lead to serious injuries*

**repetitive motion injury (RMI)**

Any of a class of pathologies created through excessively frequent use of a particular joint or tissue, especially in combination with awkward positioning, inadequate or no rest periods, or excessive loads. Also referred to

as *cumulative trauma disorder*, *repetitive strain injury*, *repetitive trauma disorder*, *repetitive stress injury*, and *overuse syndrome*.

**repetitive strain injury**

See *repetitive motion injury*.

**repetitive stress injury**

See *repetitive motion injury*.

**repetitive time method**

See *repetitive timing*.

**repetitive timing**

A work measurement time study technique in which the duration of each work element is measured and recorded in sequence as it is performed, then the timing device is immediately reset to zero to begin timing the duration of the next element. Also referred to as *repetitive time method*, *discontinuous timing*, *flyback timing*, *snapback method*, and *snapback timing*.

**repetitive trauma disorder**

See *repetitive motion injury*.

**repetitive work**

A work activity in which the work or task elements are continuously repeated over a prolonged period of time.

**replace**

To substitute one unit for another or to return something to its original position.

**replacement air**

Air supplied to a space to replace exhausted air. See also *make-up air* (the two terms are synonymous).

**replacement standard**

The estimated useful life of a motor vehicle expressed in time (months or years) and/or utilization (miles).

**replacement therapy**

The use of synthetic substances or substances recovered from natural sources to substitute for an organ, gland, or other body structure which is no longer present or has ceased functioning.

**replacement vehicle**

A vehicle acquired to replace a vehicle in inventory that meets the replacement standard or becomes uneconomical to retain in service.

**replicate**

To conduct an experiment which uses the same methodology but is independent of a previously conducted experiment.

**replicate samples**

More than one sample collected at the same time and place for the purpose of determining their reproducibility.

**report writer**

Software which can transform database, spreadsheet, or other information into a hard-copy format which is understandable by someone not familiar with the software. May also be referred to as *report generator*.

**reportable accident**

(1) *Safety*. Any accident that meets the criteria established under 29 CFR 1904 and must be reported on the OSHA 200 Log (an annual report summarizing occupational injuries and illnesses). (2) *Transit*. A motor vehicle accident involving a carrier subject to the Department of Transportation Act, which results in a fatality, injury, or property damage of \$4,400 or more.

**reportable damage**

*Rail Operations*. Includes labor costs and all other costs to repair or replace in kind damaged on-track equipment, signals, track, track structures, or roadbed. Reportable damage does not include the cost of clearing a wreck; however, additional damage to the above listed items caused while clearing the wreck is to be included in your damage estimate. Examples of other costs included in reportable damage are a) rental and/or operation of machinery such as cranes, bulldozers, etc. including the services of contractors, to replace or repair the track right-of-way and associated structures; and b) costs associated with the repair or replacement of roller bearings on units that were derailed or submerged in water (replacement costs mean the labor costs resulting from a wheel set change out).

**reportable death, injury or illness**

*Railroad*. Any event arising from the operation of a railroad which results in a) death to one or more persons; b) injury to one or more persons, other than railroad employees, that requires medical treatment; c) injury to one or more employees that requires medical treatment or results in restriction of work or

motion for one or more days, one or more lost workdays, transfer to another job, termination of employment, or loss of consciousness; or d) any occupational illness of a railroad employee, as diagnosed by a physician.

**reportable quantity (RQ)**

The quantity of a hazardous substance that triggers reports under CERCLA. If a substance is released in amounts exceeding its RQ, the release must be reported to the National Response Center, the SERC, and the community emergency coordinators for areas likely to be affected.

**reportable vehicle**

All sedans, station wagons, ambulances, buses, carryalls, trucks and truck tractors. Excluded are semitrailers, trailers, and other trailing equipment such as pole trailers, dollies, cable reels, trailer coaches and bodies, portable wheeled compressors, trucks with permanently mounted equipment (e.g. generators, air compressors, etc.), fire trucks, motorcycles, electric and hybrid powered electric vehicles and military design motor vehicles.

**reporting point**

A geographical location in relation to which the position of an aircraft is reported.

**reporting threshold**

*Rail Operations.* The level of railroad property damage, resulting from a train accident involving on-track equipment, over which a railroad company must report the accident to the Federal Railroad Administration. Reportable damages include the cost of labor and the cost of repairing (or replacing in kind) damaged on-track equipment, track, track structure, or roadbed.

**reporting unit**

Any Coast Guard Command having its own OPFAC (Operating Facility) code (and, therefore, an individual accountability).

**repository**

Under the Federal Nuclear Waste Policy Act of 1982: Any system designed by the Nuclear Regulatory Commission that is intended to be used for, or may be used for, the permanent deep geological disposal of high-level radioactive waste and spent nuclear fuel, whether or not such system is designed to permit the recovery, for a limited period during initial

operation, of any materials placed in such system. Such term includes both surface and subsurface areas at which high-level radioactive waste and spent nuclear fuel handling activities are conducted.

**repowering**

According to the Clean Air Act: Replacement of an existing coal-fired boiler with one of the following clean coal technologies: atmospheric or pressurized fluidized bed combustion, integrated gasification combined cycle, magneto-hydrodynamics, direct and indirect coal-fired turbines, integrated gasification fuel cells, or as determined by the EPA Administrator, in consultation with the Secretary of Energy, a derivative of one or more of these technologies, and any other technology capable of controlling multiple combustion emissions simultaneously with improved boiler or generation efficiency and with significantly greater waste reduction relative to the performance of technology in widespread commercial use as of November 15, 1990.

**representative sample**

A sample which is obtained as being representative of the exposure of an individual to a hazardous substance or physical agent during the work activity which is being performed.

**representative vehicle**

A motor vehicle which represents the type of motor vehicle that a driver applicant operates or expects to operate.

**representative worker**

An average worker in terms of skill and performance for the group under consideration.

**repression**

A defense mechanism whereby a person unconsciously banishes unacceptable ideas, feelings, or impulses from consciousness. A person using repression to obtain relief from mental conflict is unaware that he/she is "forgetting" unpleasant situations as a way of avoiding them.

**reproducibility**

*Instrumentation.* The precision of a single measurement on the same sample made by different operators, using different instruments.

**reproduction**

The process by which a living entity or organism produces a new individual of the same kind.

**reproduction rate**

The ratio of the total number of births from women of reproductive age to the number of women within that age group in the population.

**reproductive toxicity**

A harmful effect to the adult reproductive system. The ability of a substance or physical agent to adversely affect the reproductive system.

**reproductive toxin**

A substance that has the capability to adversely affect the adult reproductive system.

**required evaporation rate**

The amount of water from sweat or other sources which must evaporate from the body surface into the atmosphere per unit time to maintain the body's heat balance.

**required sweat rate**

The volume of sweat per unit time which must be secreted to assure adequate body cooling.

**requirements contract**

A legal agreement for a supplier to provide and for a buyer to purchase one or more types of products or materials for a specified period of time, usually at a specified price and delivery terms.

**re-refined oil**

Under the Federal Solid Waste Disposal Act: Used oil from which the physical and chemical contaminants acquired through previous use have been removed through a refining process.

**reregistration**

The reevaluation and relicensing of existing pesticides originally registered prior to current scientific and regulatory standards. EPA reregisters pesticides through its Registration Standards Program.

**res judicata**

*Latin.* A legal doctrine, meaning "the thing is decided," preventing new litigation by the same parties on the same matter after it has been fully adjudicated.

**rescissory damages**

Such damages contemplate a return of the injured party to the position he/she occupied before he/she was induced by wrongful conduct to enter into the transaction. When return of the specific right, property, etc. is not possible (e.g., in a stock fraud transaction, the stock is no longer available), the rescissory damages would be the monetary equivalent (e.g., the value of the stock).

**rescue coordination center (RCC)**

A search and rescue (SAR) facility equipped and manned to coordinate and control SAR operations in an area designated by the SAR plan. The U.S. Coast Guard and the U.S. Air Force have responsibility for the operation of RCCs.

**rescue doctrine**

Under this doctrine, one who has, through his/her negligence, endangered the safety of another may be held liable for injuries sustained by a third person who attempts to save the other from injury.

**rescue service**

The personnel designated to rescue employees from permit spaces.

**research**

Investigation or experimentation aimed at the discovery of new theories or laws and the discovery and interpretation of facts or revision of accepted theories or laws in the light of new facts.

**research and development (R & D)**

The process of attempting to find new knowledge for commercial use in creating a new product or improving current products.

**Research and Special Programs Administration (RSPA)**

The Administration was established formally on September 23, 1977. It is responsible for hazardous materials transportation and pipeline safety, transportation emergency preparedness, safety training, multimodal transportation research and development activities, and collection and dissemination of air carrier economic data. It includes the Office of Hazardous Materials Safety; the Office of Pipeline Safety; the Office of Research Technology, and Analysis; the Office of University Research and Education; the Office of Automated Tariffs; the Office of Research Policy

and Technology Transfer; the Volpe National Transportation Systems Center; and the Transportation Safety Institute.

**reserve**

That amount of energy, strength, heart rate, or other quantity which is available to an individual but which is not being used in the current activity.

**reservoir**

Any natural or artificial holding area used to store, regulate, or control water.

**reset device**

*Rail Operations.* A device whereby the brakes may be released after an automatic train control brake application.

**residential district**

The territory adjacent to and including a highway which is not a business district and for a distance of 300 feet or more along the highway is primarily improved with residences.

**residential solid waste**

The wastes generated by the normal activities of households including, but not limited to, food wastes, rubbish, ashes, and bulky wastes.

**Residential Transportation Energy Consumption Survey (RTECS)**

This survey was designed by the Energy Information Administration of the Department of Energy to provide information on how energy is used by households for personal vehicles. It has been conducted five times since 1979, the most recent being 1991.

**residential vehicle**

Motorized vehicles used by U.S. households for personal transportation. Excluded are motorcycles, mopeds, large trucks, and buses. Included are automobiles, station wagons, passenger vans, cargo vans, motor homes, pickup trucks, and jeeps or similar vehicles. To be included, vehicles must be a) owned by members of the household, or b) company cars not owned by household members but regularly available to household members for their personal use and ordinarily kept at home, or c) rented or leased for 1 month or more.

**residual**

Amount of a pollutant remaining in the environment after a natural or technological process has taken place, e.g., the sludge remaining

after initial wastewater treatment, or particulates remaining in air after the air passes through a scrubbing or process.

**residual air**

See *residual volume*.

**residual fuel**

A heavy oil product that is used by utilities and other industry as a fuel.

**residual fuel oils**

(1) The topped crude of refinery operations, which includes No. 5 and No. 6 fuel oils, as defined in ASTM Specification D 396 and Federal Specification, VV-F-815C; Navy Special Fuel oil as defined in Military Specification MIL-F-859E including Amendment 2 (NATO symbol F-77); and Bunker C fuel oil. Residual fuel oil is used for the production of electric power, space heating, vessel bunkering, and various industrial purposes. (2) The heavier oils that remain after the distillate fuel oils and lighter hydrocarbons are distilled away in refinery operations and that conform to American Society for Testing and Materials (ASTM) Specifications D396 and 975. Included are No. 5, a residual fuel oil of medium viscosity; Navy Special, for use in steam-powered vessels in government service and in shore power plants; and No. 6, which includes Bunker C fuel oil and is used for commercial and industrial heating, electricity generation, and to power ships. Imports of residual fuel oil include imported crude oil burned as fuel.

**residual hearing**

That capability for hearing retained by an individual with hearing loss.

**residual radioactive material**

Under the Federal Uranium Mill Tailings Radiation Control Act of 1978: Waste (which the Secretary of Energy determines to be radioactive) in the form of tailings resulting from the processing of ores for the extraction of uranium and other valuable constituents of the ores and other radioactive waste at a processing site which relates to such processing, including any residual stock of unprocessed ores or low-grade materials.

**residual risk**

That risk that remains after the application or implementation of controls, barriers, or other risk-reducing methods or techniques.



**residual strength**

The maximum value of nominal stress that a cracked body is capable of sustaining, neglecting the area of the crack itself.

**residual stress**

The stress that remains in a structure after processing, fabrication, assembly, testing, or operation (for example, welding-induced residual stress).

**residual volume**

The volume of air remaining in the lungs after a maximal expiration. Also called residual air.

**residue**

(1) With regard to solid wastes, all solids that remain after completion of thermal processing, including bottom ash, fly ash, and grate siftings. (2) The hazardous material remaining in a packaging, including a tank car, after its contents have been unloaded to the maximum extent practicable and before the packaging is either refilled or cleaned of hazardous material and purged to remove any hazardous vapors.

**residue rule**

States that any residue left in empty containers will not be regulated under RCRA provided that all hazardous wastes are removed from the container using the practice commonly employed to remove materials from that type of container and that no more than one inch of residue remains. Also referred to as the *one inch rule*.

**resilience**

The ratio of energy given up on a recovery from deformation to the energy required to produce the deformation in an elastic structure.

**resist-dyeing**

A textile coloring technique in which a substance which prevents dyeing is applied to certain threads before dyeing to produce coloring patterns.

**resistance**

(1) Opposition of a conductor to passage of electricity or other energy or substance. *See also electrical resistance.* (2) The ability of an organism to withstand a noxious influence. For plants and animals, the ability to withstand poor environmental conditions and/or

attacks by chemicals or disease. The ability may be inborn or developed. (3) In studies of respiration, an expression of the opposition to flow of air produced by the tissues of the air passages, in terms of pressure per amount of air per unit of time. (4) In psychoanalysis, opposition to the coming into consciousness of repressed material.

**resistance arm**

That portion of a lever arm from the fulcrum to the point at which the resistance is applied.

**resistance heating**

The use of electrical resistance to provide heat, normally within a relatively confined or localized volume.

**resistance strain gauge**

A transducer constructed of a material which changes electrical resistance under stress or deformation.

**resistance thermometer**

A device containing a sensing element whose electrical resistance varies as a known function of temperature and thus can provide a temperature measurement.

**resolution**

(1) *Instrumentation.* The smallest change in concentration of a contaminant that will produce a detectable change in instrument output. (2) *Electronics.* The number of horizontal and vertical pixels which are available for display on a screen at any given time.

**resolution acuity**

The ability to distinguish small separation distances of separate stimuli as two or more stimuli, rather than one. *See also two-point threshold and minimum resolution angle.*

**resolution angle**

*See minimum resolution angle.*

**resolve**

To detect two distinct sensory entities within the same modality as being separate.

**resonance**

(1) *General.* A phenomenon in which an externally forced oscillation imposed on a physical-mechanical system causes a maximal oscillatory response amplitude in that system. (2) *Acoustics.* Exists when any changes, however small, in the frequency of excitation

cause a decrease in the response of the system.

**resonance capture**

An inelastic nuclear collision occurring when the nucleus exhibits a strong tendency to capture incident particles, photons, or particular energies.

**resonant frequency**

*Acoustics.* A frequency at which resonance exists. *See also resonance.*

**resonate**

To cause to be in a state of resonance.

**resource**

(1) *General.* A person, thing, or action needed for living or to improve the quality of life. (2) *U.S. Coast Guard.* Any personnel or property used in rendering assistance.

**resource conservation**

According to the Federal Solid Waste Disposal Act: Reduction of the amounts of solid waste that are generated, reduction of overall resource consumption, and utilization of recovered resources.

**Resource Conservation and Recovery Act (RCRA) of 1976**

As amended by the Hazardous and Solid Waste Amendments of 1984 (or HSWA): the federal statute regulating management of hazardous waste to assure "cradle-to-grave" responsibility and tracking. The statute was enacted in 1976 as a result of the realization that the improper disposal of hazardous wastes posed a significant threat to human health and the environment. RCRA authorizes the EPA to list hazardous materials being disposed of as hazardous wastes and to develop record-keeping, labeling, and handling requirements for hazardous waste. Most of the regulations developed under RCRA concern the control of hazardous waste generators, transporters and treatment, storage and disposal facilities (TSDFs).

**resource recovery**

According to the Federal Solid Waste Disposal Act: The recovery of material or energy from solid waste.

**resource recovery facility**

Under the Federal Solid Waste Disposal Act: Any facility at which solid waste is processed for the purpose of extracting, converting to

energy, or otherwise separating and preparing solid waste for reuse.

**resource recovery system**

Under the Federal Solid Waste Disposal Act: A solid waste management system which provides for collection, separation, recycling, and recovery of solid wastes, including disposal of non-recoverable waste residues.

**respirable**

Aerosols of a size small enough to be inhaled into the deep lung space (i.e., particulate matter with an aerodynamic diameter of 10 micrometers or less). *See also respirable dust.*

**respirable dust**

Airborne particulate matter capable of passing through the upper respiratory system and being deposited in the lungs. Such particles are typically less than 10 microns in diameter. *See also respirable.*

**respirable fraction**

The mass fraction of inhaled particulate matter which penetrates to the unciliated airways of the lungs.

**respirable particulate**

The fraction of inspired particulates which are capable of penetrating into the lung after larger particles are removed in the upper respiratory tract. Respirable particulates are those in the size range which permits them to penetrate to the lungs upon inhalation. *See also respirable.*

**Respirable Particulate Mass (RPM)**

*Sampling.* Those particles which penetrate a separator whose size collection efficiency is described by a cumulative lognormal function with a median aerodynamic diameter of 3.5 micrometers and with a geometric standard deviation of 1.5.

**Respirable Particulate Mass TLV (RPM-TLV)**

Those materials that are hazardous when deposited in the gas-exchange region of the respiratory system.

**respiration**

(1) Process that involves the oxidation of inorganic or organic molecules. (2) The physical-chemical exchange of gases across tissues. (3) The exchange of oxygen and carbon dioxide in the body (a) in the lungs, (b) between

the cell and its environment, and (c) in the metabolism of the cell. The sequence of the respiration process begins as air enters the corridors of the nose or mouth, where it is warmed and moistened. The air then passes through the pharynx, larynx, and trachea and into the bronchi. The bronchi branch in the lungs into smaller and smaller bronchioles, ending in clusters of tiny air sacs called alveoli. There are 750 million of these alveoli in the lungs. The blood flows through the lungs in the pulmonary circulation. Through the thin membrane of the network of capillaries around the alveoli, the air and the blood exchange oxygen and carbon dioxide. The carbon dioxide molecules migrate from the erythrocytes in the capillaries through the porous membrane into the air in the alveoli, while the oxygen molecules cross from the air into the red blood cells. The erythrocytes proceed through the circulatory system, carrying the oxygen in loose combination with hemoglobin and giving it up to the body cells that need it. In cellular respiration the blood cells release oxygen and pick up carbon dioxide. The lungs dispose of the carbon dioxide, left there by the red blood cells, in the process of breathing. With each breath, about one-sixth of the air in the lungs is exchanged for new air. (4) See *respire*.

#### **respirator**

(1) *Industrial Health*. A personal protective device that is designed to protect the wearer from inhaling a harmful atmosphere. There are two basic types of respirators: one which removes the contaminant from inspired air (air purifying) and one which supplies clean air from another source, such as a cylinder or compressor (atmosphere supplying). (2) *Medical*. A mechanical device for helping an individual breathe who cannot adequately perform that function unassisted due to disease or injury.

#### **respirator fit test**

A procedure that is followed to determine if a respirator wearer obtains a proper fit, either by a qualitative, quantitative, or workplace test. The results of the test indicate if the wearer is getting the protection that is to be afforded by the respiratory protection device and whether the user puts the device on properly to get a good fit.

#### **respiratory capacity**

A measure of the ability of oxygen to combine with blood in the lungs and carbon dioxide with blood in the tissues for return to the lungs. See also *vital capacity*.

#### **respiratory coefficient**

See *respiratory quotient*.

#### **respiratory diseases**

Diseases which result from the effects of harmful substances on the respiratory tract (e.g., pneumoconiosis, bronchitis, pulmonary irritation, lung cancer, etc.).

#### **respiratory frequency**

The number of respiratory cycles per unit of time; the inverse of the respiratory period.

#### **respiratory hazard**

Any airborne entity which may result in some form or respiratory disability either immediately or over time.

#### **respiratory irritants**

Substances which irritate the respiratory tract (e.g., the nasal passages, larynx, trachea, bronchi, alveoli, etc.).

#### **respiratory period**

The time interval between the beginning of two successive inspirations (the inverse of the *respiratory frequency*).

#### **respiratory protection**

An apparatus, such as a respirator, used to reduce the individual's intake of a substance by the inhalation route.

#### **respiratory protection program**

Typically, a written program addressing the procedures for the selection, training, inspection, maintenance, storage, use, etc. necessary to have an effective respirator program for protecting personnel from inhalation hazards when engineering or administrative controls are not adequate, are being implemented, or for tasks which are intermittent and when engineering controls are not feasible.

#### **respiratory quotient (RQ)**

The value of the ratio of carbon dioxide volume excreted to the volume of oxygen consumed by an organism within a specified time interval.

#### **respiratory system**

The group of organs concerned with the exchange of oxygen and carbon dioxide in or

ganisms. In higher animals, it consists successively of the air passage through the mouth, nose, and throat; the trachea; the bronchi; the bronchioles; and the alveoli of the lungs.

**respiratory tract**

That part of the respiratory system through which air normally passes, the nasal cavities, the pharynx, the larynx, and the lungs.

**respire**

Breathe, inhale/inspire, and exhale/expire atmospheric gases.

**respirometer**

An instrument for measuring such respiration parameters as breathing rate and the force involved in breathing.

**respondeat superior**

Term of law which holds an employer responsible for the acts of employees during the course of their employment.

**response**

(1) *General*. An action or output of a system, usually occurring as a result of some stimulus or input. (2) *Instrumentation*. The quantity of output signal that results from a challenge by a given amount of sample (i.e., the material of interest).

**response action**

A CERCLA-authorized action involving either a short-term removal action or a long-term removal response that may include but is not limited to removing hazardous materials from a site to an EPA-approved hazardous waste facility for treatment, containment, or destruction; containing the waste safely on-site; destroying or treating the waste on-site; and identifying and removing the source of groundwater contamination and halting further migration of contaminants.

**response action contractor**

Under CERCLA, any a) person who enters into a response action contract with respect to any release or threatened release of a hazardous substance or pollutant or contaminant from a facility and is carrying out such contract; and b) person, public or nonprofit private entity, conducting a field demonstration pursuant to CERCLA; and c) recipients of grants (including sub-grantees) under CERCLA for the training and education of work-

ers who are or may be engaged in activities related to hazardous waste removal, containment, or emergency response under CERCLA. Also any person who is retained or hired by a person described in a, b, or c above to provide any services relating to a response action. Also any surety who after October 16, 1990, and before January 1, 1996, provided a bid, performance or payment bond to a response action contractor, and began activities to meet its obligations under such bond, but only in connection with such activities or obligations.

**response activities**

The containment and removal of oil from the water and shorelines, the temporary storage and disposal of recovered oil, or the taking of other actions as necessary to minimize or mitigate damage to the environment.

**response area**

The inland zone or coastal zone, as defined in the National Contingency Plan (40 CFR 300), in which the response activity is occurring.

**response check**

*Instrumentation*. A procedure to determine that the instrument is working properly and responding to the contaminant it was designed to detect and measure. Typically, no adjustment is made to the instrument when a response check is made.

**response costs**

Under CERCLA, those costs associated with the cleanup, removal (including costs associated with emergency response), remedial action (costs associated with permanent remedies), and related enforcement activities.

**response flatness**

Having a constant output for a given input over a range of frequencies.

**response inventory**

That entire set of kinesiological, physiological, and psychological responses available to an individual when presented with one or more stimuli. Also called *reactions inventory*.

**response orientation**

The ability to discriminate between two or more different stimuli and rapidly initiate the appropriate physical response.

**response plan**

The operator's core plan and the response zone appendices for responding, to the maximum extent practicable, to a worse case discharge of oil, or the substantial threat of such a discharge.

**response resources**

The personnel, equipment, supplies, and other resources necessary to conduct response activities.

**response time**

(1) *Human Behavior*. The temporal interval between a stimulus and the completion of that motor activity required for the response. (2) *Instrumentation*. The time required for an instrument to indicate a designated percentage (usually 90%) of a step change in the variable being measured. The time required for an instrument to indicate a change in concentration or level after being challenged by the agent being measured. (3) The period of time required for an individual or organization to receive a service request, dispatch a worker, and arrive at the servicing location.

**response zone**

A geographic area either along a length of pipeline or including multiple pipelines, containing one or more adjacent line sections, for which the operator must plan for the deployment of, and provide, spill response capabilities. The size of the zone is determined by the operator after considering available capability, resources, and geographic characteristics.

**responsibility**

(1) Having to answer for activities and results. (2) An obligation incurred by or assigned to an individual or organization to perform at a certain level and/or within a certain time. (3) The state of being answerable for an obligation, and includes judgement, skill, ability, and capacity.

**responsibility analysis**

A determination of who is responsible for making certain decisions regarding performance, use of resources, and other aspects.

**rest allowance**

That amount of time added to the basic time for completion of a task to permit the worker to recover from fatigue due to the task or working conditions and to attend to personal

requirements. Also called *relaxation allowance*.

**rest for overcoming fatigue**

A work element in which the worker is allowed to rest to overcome fatigue effects.

**rest pause**

See *rest period*.

**rest period**

A short interval of time, generally 5-15 minutes, during a work shift which is allocated to reducing or preventing fatigue and for which the worker is paid. Other common related terms include *rest pause*, *coffee break*, and *break time*.

**rest site**

A roadside area usually having facilities for people and/or vehicles.

**resting potential**

That voltage difference across a cell membrane under normal conditions without any exciting stimulus. Generally a standard value for a given type of cell.

**restoration**

Measures taken to return a site to pre-violation conditions.

**restoring feature**

An arrangement on an electro-pneumatic switch by means of which power is applied to restore the switch movement to full normal or to full reverse position, before the driving bar creeps sufficiently to unlock the switch with the control lever in normal or reverse position.

**restraint**

Any harness or other mechanical device intended to prevent or restrict unintended movement of some object, body part, or the body as a whole, usually in response to vibration, or rapid acceleration or deceleration. See also *active restraint* and *passive restraint*.

**restraint usage**

Manually operated restraint systems include shoulder belts, lap belts, lap and shoulder belt combinations, or child safety seats. Automatic restraint systems include passive belts and air bag systems. See also *mandatory use seat belt law*, and *manual restraint system*.

**restricted area**

(1) *Ionizing Radiation*. An area, access to which is limited by the licensee for the pur-

pose of protecting individuals against undue risks from exposure to ionizing radiation and radioactive materials. (2) *Aviation*. Airspace designated under Federal Aviation Regulations (FAR), Part 73, within which the flight of aircraft, while not wholly prohibited, is subject to restriction. Most restricted areas are designated joint use and Intermediate Fix/Visual Flight Rules IF/VFR operations in the area may be authorized by the controlling Air Traffic Control (ATC) facility when it is not being utilized by the using agency. Restricted areas are depicted on en route charts. Where joint use is authorized, the name of the ATC controlling facility is also shown.

**restricted element**

See *externally paced element*.

**restricted road**

Public road with restricted public use.

**restricted speed**

*Transit*. A speed that will permit stopping within one-half the range of vision, but not exceeding 20 miles per hour.

**restricted use**

When a pesticide is registered, some or all of its uses may be classified (under FIFRA regulations) for restricted use if the pesticide requires special handling because of its toxicity. Restricted-use pesticides may be applied only by trained, certified applicators or those under their direct supervision.

**restricted-use pesticides**

Pesticides that must be applied under the supervision of a certified applicator.

**restricted work**

See *externally paced work*.

**restriction enzymes**

Enzymes that recognize certain specific regions of a long DNA molecule and then cut the DNA into smaller pieces.

**restriction of work or motion**

*Rail Operations*. The inability of a railroad employee to perform all normally assigned duties because of injury or occupational illness, and includes the assignment of a railroad employee to another job or to less than full time work at a temporary or permanent job.

**retail gasoline (motor) prices**

Motor gasoline prices calculated each month by the Bureau of Labor Statistics (BLS) in conjunction with the construction of the Consumer Price Index (CPI). Those prices are collected in 85 urban areas selected to represent all urban consumers about 80 percent of the total U.S. population. The service stations are selected initially, and on a replacement basis, in such a way that they represent the purchasing habits of the CPI population. Service stations in the current sample include those providing all types of service (i.e., full-, mini-, and self-service). See also *gasoline*.

**retain**

To maintain information placed in memory.

**retained earnings**

Net income or loss from all operations of the corporate entity less dividends and net unrealized loss on noncurrent marketable equity securities.

**retaliation**

Any act by an employer against an employee in response to some undesired action outside the workplace by the employer.

**retarding basin**

Basin or embarked area for retarding the flow of flood waters.

**reticle**

A glass disc with a scale inscribed on its surface that is placed in the eyepiece of a microscope to define an area and determine the size of particles.

**retina**

The delicate multi-layer, light-sensitive membrane lining the inner eyeball and connected by the optic nerve to the brain. The retina is composed of light-sensitive neurons arranged in three layers. The first layer is made up of rods and cones and the other two transmit impulses from the rods and cones to the optic nerve. The rods are sensitive in dim light, and the cones are sensitive in bright light and are responsible for color vision.

**retinal illuminance**

The luminous flux incident on the retina per unit area.

**retinal image**

That portion of the field of view which is focused on the retina.



**retinal image disparity**

Any difference existing between the images formed in the two eyes when an object is viewed with both eyes. Also called *retina disparity*.

**retinal image size**

That length and/or width of an external object as represented on the retina.

**retinal rivalry**

See *binocular rivalry*.

**retinitis pigmentosa**

A disease in which the retina slowly deteriorates. It is believed to be hereditary. The first sign is *night blindness*. Later, the visual field narrows as if looking through the barrel of a gun.

**retrieval buffer**

A temporary storage location from which the user may retrieve information after some action which would normally have deleted it.

**retrieval system**

The equipment (including a retrieval line, chest or full-body harness, wristlets, if appropriate, and a lifting device or anchor) used for non-entry rescue of persons from permit spaces.

**retroactive**

Having the character of applying to past actions, as in retroactive liability. Most civil laws are *prospective* rather than retroactive, and no criminal statutes are retroactive.

**retroactive inhibition**

That disruptive effect on the ability to recall information from a task by the imposition of an additional learning activity between the end of the primary learning task and the test for recall. See also *proactive inhibition*.

**retroflex**

A consonant sound represented by the "r" as in read or beer.

**retrograde amnesia**

The loss of memory for events preceding some event which caused the present condition.

**retro-reflective material**

*Maritime Safety*. A type of material applied either in strips or sheets which reflects searchlight illumination; used on all aids to

navigation, both unlighted and lighted, afloat and ashore. See also *reflective material*.

**retrospective cohort study**

A group (cohort) that is known to have been exposed to a condition or substance in the past is selected and followed to disease or death at some point also in the past. The results are compared to the expected number of occurrences found in an unexposed cohort from the same time period.

**retro-torsion**

Twisting backward.

**return air (RA)**

Air which is returned to the fan from the occupied space for recirculation.

**return stroke**

The luminous lightning stroke that propagates upward from the earth to the base of a cloud. See also *lightning*.

**revenue**

(1) *General*. Funds received for services rendered and/or products delivered. (2) *Transit*. Pertaining to transport activities for which remuneration is received by the carrier.

**revenue bonds**

The most common form of financing for port authorities. The bonds usually name a specific facility whose income is pledged as security. The power to issue revenue bonds, as well as any other fiscal power, must come from the authority's charter or legislative acts authorizing the creation of such an authority.

**revenue load factor**

*Transit*. The percent that revenue ton miles (passenger and nonpassenger) are of available ton miles in revenue services, representing the proportion of the overall capacity that is actually sold and utilized.

**revenue load per aircraft mile**

*Aviation*. The average total tonnage carried per aircraft in revenue services derived by dividing overall revenue ton miles by the aircraft miles flown in revenue services.

**revenue passenger**

*Aviation*. Person receiving air transportation from the air carrier for which remuneration is received by the carrier. Air carrier employees or others receiving air transportation against whom token service charges are levied are

considered nonrevenue passengers. Infants for whom a token fare is charged are not counted as passengers.

#### **revenue passenger enplanements**

*Aviation.* (1) The total number of passengers boarding aircraft. Includes both originating and connecting passengers. (2) Total number of revenue passengers boarding aircraft in scheduled service including origination, stopover, or connecting passengers. *See also enplanement.*

#### **revenue passenger load factor**

*Aviation.* The percent that revenue passenger-miles are of available seat-miles in revenue passenger services, representing the proportion of aircraft seating capacity that is actually sold and utilized.

#### **revenue passenger mile (RPM)**

*Aviation.* One revenue passenger transported one mile in revenue service. Revenue passenger miles are computed by summation of the products of the revenue aircraft miles flown on each inter-airport hop multiplied by the number of revenue passengers carried on that hop.

#### **revenue passenger trips**

The number of fare-paying transit passengers with each person counted once per trip; excludes transfer and nonrevenue trips.

#### **revenue plane-miles**

The total plane miles flown in revenue service.

#### **revenue seat mile**

The movement of one transit passenger seat over 1 mile. In other words, the total number of revenue seat miles for a vehicle is obtained by multiplying the number of revenue seats in the vehicle by the number of revenue miles traveled.

#### **revenue service**

*Transit.* The time when a vehicle is available to the general public and there is a reasonable expectation of carrying passengers that either directly pay fares, are subsidized by public policy, or provide payment through some contractual arrangement. Vehicles operated in fare free service are considered in revenue service. Revenue service excludes deadhead, school bus, and charter service.

#### **revenue ton mile**

*Rail Operations.* The movement of a ton of freight one mile for revenue.

#### **revenue vehicle mile**

The distance in miles that a revenue vehicle is operated while it is available for passenger service.

#### **revenue vehicle operation**

All activities associated with revenue vehicle operation including moving revenue vehicles along routes while boarding and discharging passengers, deadheading, laying-over, moving operators to relief points, and assisting passenger loading.

#### **revenue vehicles**

The floating and rolling stock used in providing transit service for passengers. The term revenue vehicles includes the body and chassis and all fixtures and appliances inside or attached to the body or chassis, except fare collection equipment and revenue vehicle movement control equipment (radios).

#### **reverberant field**

*Acoustics.* Location where reflected sound dominates as opposed to that near the source where direct sound from the source dominates.

#### **reverberant room**

A room with hard walls, floors, and ceiling, such that sound is scattered and reflected and persists for a short period after a noise source within the room is turned off. Also referred to as a *reverberation chamber*.

#### **reverberation**

The persistence of sound after direct reception of the sound has ceased.

#### **reverberation time**

The time that would be required for the mean-square sound pressure level, originally in a steady state, to fall 60 decibels after the source is stopped.

#### **reverse commuting**

Movement in a direction opposite the main flow of traffic, such as from the central city to a suburb during the morning peak period.

#### **reverse fault**

*Seismology.* A fault in which the displacement is predominantly vertical, and the hanging wall is moved upward with respect to the footwall. Some amount of reverse slip is

often seen in predominantly lateral faults. If a reverse fault has a dip angle of less than 45 degrees, it is called a *thrust fault*.

**reverse osmosis**

A water treatment process used in small water systems by adding pressure to force water through a semipermeable membrane. Reverse osmosis removes most drinking water contaminants. Also used in wastewater treatment. large-scale reverse osmosis plants are now being developed.

**reverse video**

A highlighting technique in which the foreground and background colors are reversed for a segment of text or other portion of a display.

**rework**

To reprocess to correct a defect or deficiency in a product, either before or after inspection.

**Reynold's number (Re number)**

A dimensionless ratio, applicable to the movement of fluid through a pipe/duct, that is proportional to pipe or duct diameter, velocity, and density of the fluid, and inversely proportional to its viscosity. The Reynold's number is used to predict whether fluid flow is turbulent or laminar.

**Rf**

See *radio frequency*.

**Rf radiation**

Radio frequency radiation.

**RFG**

Reformulated gasoline.

**RFI**

Request for information. Also, radio frequency interference.

**RFR**

Radio frequency radiation.

**RH**

See *relative humidity*.

**Rh factor**

One of many types of substances called agglutinogens that may be present in the erythrocytes (red blood cells). There are at least eight different variation of these agglutinogens, and each of the agglutinogens is called an Rh factor (named for the rhesus monkey used in early experiments). If any one of these factors is present in an individual's red

blood cells, he/she is said to be Rh positive; if the factor is absent, he/she is said to be Rh negative. Approximately 85 percent of all Caucasoids are Rh positive, and 15 percent are Rh negative. Other races, such as Indians of North America, Negroes, Japanese, and Chinese, are 99 to 100 percent Rh positive. The presence or absence of an Rh factor is especially important in blood transfusions and in pregnancy because mixing of two types of blood may result in the agglutination (clumping together) of red blood cells, with plugging of the capillaries and destruction of the red blood cells. This agglutination is an immune reaction and depends on the formation of antibodies against the specific agglutinogen (Rh factor) present in the erythrocytes. It should be pointed out that this immune reaction does not occur immediately, but depends on the gradual formation of antibodies; the response also is more severe in some persons than in others. Thus, there may be no difficulty in the first transfusion of Rh-incompatible blood, but on repeated exposure to the Rh factor, the Rh-negative individual becomes "sensitized" to the agglutinogens in Rh-positive blood and builds up a greater quantity of antibodies.

**rheumatic**

Pertaining to or affected with rheumatism.

**rheumatic fever**

A disease associated with the presence of hemolytic streptococci in the body. It is called rheumatic fever because two of the most common symptoms are fever and pain in the joints similar to that of rheumatism. Rheumatic fever is relatively uncommon today, but occurs at times among young children between 5 and 15 years of age. Young adults in the early twenties are also potentially susceptible.

**rheumatism**

Any disease with pain referred to the musculoskeletal system, most commonly in the area of a joint, accompanied by stiffness.

**rhinitis**

Inflammation of the mucous membrane lining of the nasal passages. It may be mild and chronic, or acute and of short duration. Viruses, bacteria, and allergens are responsible for the varied manifestations of rhinitis. Often a viral rhinitis is complicated by a bacterial infection caused by streptococci, staphy-

lococci, and pneumococci, or other bacteria. Hat fever, an acute type of allergic rhinitis, is also subject to bacterial complications.

### **rho ( $\rho$ )**

The correlation coefficient in the Spearman rank-order correlation test.

$$\rho = 1 - \frac{6 \sum D^2}{N(N^2 - 1)}$$

where:

$D$  = the difference between the scores within a pair

$N$  = number of pairs of scores

### **rhodopsin**

A red photosensitive protein pigment in the rods of the eye and involved in light transduction under low light level conditions.

### **rhyme test**

Any test, usually multiple choice, in which an individual's task is to select from a list of possibilities the word he/she believes they heard.

### **rib**

One of a set of bones which connects the vertebrae and the sternum, and which collectively encloses the thorax.

### **riboflavin**

Vitamin B<sub>2</sub>, a yellow crystalline powder, apparently concerned in the metabolism of all living cells. Also called *lactoflavin*.

### **ribonucleic acid (RNA)**

A molecule that carries the genetic message from DNA to a cell's protein-producing mechanisms; similar to, but chemically different from, DNA.

### **Ricco's law**

A rule that, for small targets, the threshold intensity for detecting a target varies inversely with the size of the target.

### **Richter Scale**

*Seismology*. Introduced in 1935 by Charles F. Richter, the Richter Scale is a numerical scale for quantifying earthquake magnitude. Typically it refers to local magnitude, but for larger quakes, it often refers to surface-wave magnitude. Currently, large quakes are generally assigned a moment magnitude, which is scaled to be similar, but is based on seismic moment, and a better measure of the energy of an earthquake. Since the Richter Scale is

logarithmic, very small earthquakes (micro-earthquakes) can have negative magnitudes. While the scale has no theoretical upper limit, the practical upper limit, given the strength of materials in the Earth's crust, is just below 9.0 for local or surface magnitudes and just below 10.0 for moment magnitudes. *See also local magnitude, surface-wave magnitude, moment magnitude, and seismic moment.*

### **rickets**

A nutritional disease caused by a deficiency of Vitamin D in the diet. A major symptom of rickets is softening (decalcification) of the bones. In children, this can produce various degrees of deformity, including nodules on the ribs and flexibility and bending of bones.

### **rickettsia**

A class of microbial agents resembling small bacteria that multiply by simple fission, but only within a living cell. The rod-shaped to round microorganisms are found in the cytoplasm of tissue cells of lice, fleas, ticks, and mites, and transmitted to man by their bites.

### **ride quality**

A measure of the comfort level experienced by a passenger in a moving vehicle, including the vibration intensity and frequency, accelerations (longitudinal, transverse, and vertical), jerk, pitch, yaw, and roll.

### **rider's bone**

A calcium deposit in the adductor muscles of the leg in horse riders due to prolonged pressure of the thigh against the saddle.

### **ridership**

The number of rides taken by people using a public transportation system in a given time period.

### **ridesharing**

A form of transportation, other than public transit, in which more than one person shares the use of the vehicle, such as a van or car, to make a trip. Also known as *carpooling* or *vanpooling*.

### **ridge**

An elongated area of high atmospheric pressure.

### **ridge line**

The line separating drainage basins.

**RI/FS**

Remedial investigation/feasibility study. *See also remedial investigation and feasibility study.*

**rig**

*Transit (slang).* A truck, tractor-semitrailer, truck and full trailer, or other combination.

**rigging**

(1) *Material Handling.* General term used to describe the equipment and associated hardware used with cranes and other lifting devices. These may include wire ropes, slings, hooks, turnbuckles, lifting beams/bars, clamps, etc. (2) *Maritime.* A collective term describing wire cables, chain length, ratchet turnbuckles, and other miscellaneous associated gear used for securing barges in a tow.

**right and wrong test**

Under this test of criminal responsibility, if, at the time of committing an act, the party was laboring under such a defect of reason from disease of the mind as not to know the nature and quality thereof, that the person did not know that an act or action was wrong, the person should not be held criminally responsible for his/her act.

**right bank**

The right descending bank of a river on which side are maintained black buoys, green or white lights, and white or silver reflective material. *See also left bank and reflective material.*

**right-hand draft**

Current which pulls a tow to the right.

**right of action**

The right to bring suit; a legal right to maintain an action, growing out of a given transaction or state of facts and based thereon.

**right-of-way**

(1) The legal priority of one vehicle, pedestrian, or other object to proceed before another in the event of possible conflict. (2) The land (usually a strip) acquired for or devoted to highway or railway transportation purposes. *See also exclusive rights-of-way.*

**right-of-way worker**

A railroad employee who, by virtue of his/her job assignment/duties, must access and perform work on the designated right-of-way of a railway system. Specific protocols are in

place to ensure the worker's safety during the performance of this work (*see blue signal*).



*Railway (or "roadway") worker performing repairs on the right-of-way of a railway system*

**right-to-know**

*See Hazard Communication Standard.*

**right-to-work**

Pertaining to any designation, law, or legislation permitting employment by other than labor union members.

**rigid body**

A modeling structure which is not capable of deformation on the application of forces.

**rime ice**

A white, granular deposit of ice formed by the freezing of water drops when they come in contact with an object.

**riming**

*See accretion.*

**ring badge**

A film badge or TLD that is worn on the finger to determine the wearer's exposure to ionizing radiation.

**ring finger**

Digit IV, adjacent to the little finger, often referring specifically to the left hand.

**Ringlemann chart**

(1) A series of shaded illustrations used to measure the opacity of air pollution emissions. The chart ranges from light gray through black and is used to set and enforce emissions standards. (2) Chart, numbered from one to five, to simulate various smoke densities by presenting different percentages of black. Used to evaluate the emission of smoke from a stack.

**ringworm**

The popular name of a fungus infection of the skin, even though it is not caused by a worm and is not always ring-shaped in appearance. Ringworm is caused by a group of related fungi of different types. These parasites feed on the body's waste products of dead skin and perspiration. They attack the skin in various areas, especially in body folds, such as the armpit and crotch. One type found between the toes is commonly referred to as athlete's foot; another affects the soles and toenails.

**Rinne test**

A method for detecting conductive hearing loss in which a vibrating tuning fork is brought into contact with the skin over the temporal bone behind the ear; then, when the sound can no longer be heard via bone conduction, the tuning fork is moved just anterior to the external auditory canal. An individual with middle ear conductive hearing loss will not hear the tone after the change in position, while an individual with normal hearing will. *See also* [tuning fork test](#).

**Riparian**

Pertaining to land adjacent to the water line.

**Riparian Habitat**

Areas adjacent to rivers and streams that have a high density, diversity, and productivity of plant and animal species relative to nearby uplands.

**Riparian Rights**

Entitlement of a land owner to the water on or bordering his property, including the right to prevent diversion or misuse of upstream waters. Generally, a matter of state law.

**ripeness doctrine**

The principle that the federal courts require an actual, present controversy, and therefore will not act when the issue is only hypothetical or the existence of a controversy merely speculative. The constitutional mandate of case or controversy (U.S. Constitution, Article III) required an appellate court to consider whether a case has matured or ripened into a controversy worthy of adjudication before it will determine the same.

**riprap**

A group of concrete slabs or stones used in bank improvement and around other types of marine construction to protect against erosion from the swift water.

**rise**

The vertical distance from the top of a stair tread to the top of the next higher tread.

**rise angle**

The angle which a stair makes with the ground or reference level. Determined by the ratio of rise height to tread depth.

$$\theta = \tan^{-1} \left( \frac{\text{riser height}}{\text{riser depth}} \right)$$

**rise time**

*Instrumentation.* The time required for an instrument to indicate a designated percentage (e.g., usually 90%) of the full response that will result with an increase in the concentration of the material being measured.

**riser**

(1) The upright member of a step situated at the back of a lower stair tread and near the leading edge of the next higher tread. (2) A reservoir of a molten metal connected to the casting to provide an additional metal to the casting. An additional metal is required as the result of shrinkage that occurs before and during solidification.

**riser compounds**

Extra-strength binders used to reduce the extent of riser erosion. Such material generally contains lignin, furfuryl alcohol, and phosphoric acid.

**rising river**

The river condition when gauge readings are increasing day by day.



**risk**

(1) That uncertainty of attaining a desired goal or potential for experiencing some loss in undertaking some action. (2) The likelihood or possibility of hazard consequences in terms of severity and probability of occurrence. The probability of occurrence of a loss-producing event, the chance of loss. (3) The probability or a range of probabilities that a specific adverse effect may occur under the conditions of human exposure. It may be expressed in quantitative terms, taking values from zero (certainty that harm will not occur) to one (certainty that it will). In many cases, risk can only be described qualitatively (i.e., as high, low, or trivial). (4) Quantitative measure of the consequences and probability of harm imposed by a hazard. (5) A measure of the probability and severity of an adverse health effect occurring as a result of an exposure to a contaminant, physical stress, or other health hazard (e.g., ergonomic factor, biological organism, bloodborne pathogen, etc.). (6) In insurance law, the danger or hazard of a loss of property insured; the casualty contemplated in a contract of insurance; the degree of hazard; a specified contingency of peril; and, colloquially, the specific house, factory, ship, etc. covered by the policy.

**risk analysis**

A detailed examination of any activity or functioning system in which potential adverse effects and their probabilities are calculated, and the various risks are quantified or measured.

**risk analysis of incineration emissions**

An estimate of potential impact on human health and the environment from the emission of incinerator(s). Major factors in making the analysis include carcinogenic potency and threshold toxicity values for organic or heavy metal compounds.

**risk assessment**

(1) The qualitative and quantitative evaluation performed in an effort to define the risk posed to human health and/or the environment by the presence or potential presence and/or use of specific pollutants. (2) A process for estimating risks to human health from exposure to chemical or radiochemical substances. (3) Estimating impacts to species, populations, and communities from a variety of

chemical, physical, and biological influences (ecological). (4) A method developed by the National Academy of Sciences in 1983 focusing on accident potential and hazard identification, exposure and toxicity assessment, and risk characterization. (5) The analytical process used to determine the level of risk.

**risk assessment code (RAC)**

An alphanumeric rating of hazard risk based upon its anticipated frequency of occurrence and the resultant severity of exposure to such risk. May also be referred to as *hazard risk index* or *HRI*.

**risk characterization**

Combines information on the potential magnitude of exposure to chemicals from the site with dose-response information derived from the hazard assessment. The result is a description of the potential nature and magnitude of the health or environment risk associated with each chemical on site.

**risk communication**

The exchange of information about health or environmental risks between risk assessors, risk managers, the general public, news media, interest groups, etc.

**risk cost-benefit analysis**

A combination of cost-benefit analysis and risk assessment. It is intended to assess the costs and benefits associated with prevention or reduction of risks to human health and the environment.

**risk evaluation**

An appraisal of the degree of undesirability of the various risks after they have been quantified. Consideration is given to the various factors and tradeoffs influencing risk acceptability.

**risk event**

An occurrence with the potential to lead to an unwanted event such as an accident or incident.

**risk factor**

A correlation of characteristics (e.g., sex, age, race, obesity, etc.) or variables (e.g., smoking, occupational exposure level, etc.) with increased probability of a toxic effect.

**risk level**

The population size on which it is estimated that one additional case of cancer will be re-

ported due to the daily consumption of water and edible aquatic organisms.

### **risk management**

(1) The process of evaluating alternative regulatory and non-regulatory responses to risk and selecting among them. The selection process necessarily requires the consideration of legal, economic, and social factors. (2) The process whereby management decisions are made concerning control and minimization of hazards and acceptance of residual risk. This includes the identification, analysis, and evaluation of risk and the selection of the most advantageous method of treating it. (3) The process, derived through the application of system safety principles, whereby management decisions are made concerning control and minimization of hazards and acceptance of residual risks. (4) Process by which risk assessment is incorporated into social and political policy.

### **risk regulating agencies**

The agencies that have been given primary authority to regulate activities and substances that pose chronic health risks. These include the Environmental Protection Agency (EPA), the Food and Drug Administration (FDA), the Occupational Safety and Health Administration (OSHA), and the Consumer Product Safety Commission (CPSC).

### **risk retention group**

Under CERCLA, any corporation or other limited liability association taxable as a corporation, or as an insurance company, formed under the laws of any state.

### **risk specific dose (RSD)**

An ambient concentration corresponding to a specified risk. In risk analysis, EPA recommends the health-based levels (known as RSDs) for carcinogens and reference air concentrations (RACs) for non-carcinogens. Risk from carcinogens is additive.

### **Risley prism**

A serial mounting of two thin, equivalent prisms with opposing faces which can be rotated individually about their common longitudinal axis. Used for testing ocular convergence.

### **ritual**

A set of stereotyped actions that is believed to bring about some desired results.

### **river basin**

The land area drained by a river and its tributaries.

### **river basin concept**

The notion that each river system, from its headwaters to its mouth, is a single unit and should be treated as such. This concept recognizes the interrelationship of resource elements in a single basin, and assumes that multiple-purpose development can take this interrelationship into account. It extends the principle of ecological balance to the whole of the area and its occupants.

### **river gauge**

A gauge measuring height of water located farther along the river than just above and below a dam.

### **river mileage**

Designated mileage from the mouth of the river used for identifying locations along the riverbanks. An exception is the Ohio River, on which mileage commences from the head of the river in lieu of the mouth.

### **river stage**

The height of the water at a certain location on a given day.

### **river towboat**

A shallow draft, low freeboard, self-propelled vessel designed to tow river barges by pushing ahead.

### **river wall**

The lock wall on the river side.

### **riveting hammer**

A mechanical pounding device used for driving rivets.

### **RJP**

See *realistic job preview*.

### **RMCL**

See *recommended maximum contaminant level*.

### **RMI**

See *repetitive motion injury*.

### **RMP**

Risk management program. Also, Radon Measurement Proficiency.

### **RMP Program**

Radon Measurement Proficiency Program.

### **rms**

See *root mean square*.

**RNA**

See *ribonucleic acid*.

**road**

An open way for the passage of vehicles, persons, or animals on land.

**road call**

Unscheduled maintenance requiring either the emergency repair or service of a piece of equipment in the field or the towing of the unit to the garage or shop. See also *roadcalls for mechanical failure* and *roadcalls for other reasons*.

**road class**

The category of roads based on design, weatherability, their governmental designation, and the Department of Transportation functional classification system.

**road functional classification**

The classification of a road in accordance with the Bureau of Land Management (BLM) 9113.16. Code as follows: C-collector, L-local, R-resource.

**road gate**

Gate blocking entrance to a road.

**road hog**

*Transit (slang)*. Motorist who takes more than his share of the highway.

**road miles**

The length in miles of the single or first main track measured by the distance between terminals or stations, or both. Road miles do not include industrial and yard tracks, sidings, and all other tracks not regularly used by road trains operated in such specific service, and lines operated under a trackage rights agreement.

**road oil**

Any heavy petroleum oil, including residual asphaltic oil used as a dust palliative and surface treatment on roads and highways. It is generally produced in six grades, from 0, the most liquid, to 5, the most viscous.

**road or trail restrictions**

Limitations placed on the use of a road or trail. Code as follows: S-seasonal closure; Y-closed yearlong to motorized vehicles; R-restriction on types of traffic allowed on road; L-limitations on vehicle dimensions, weight, or speed; N-no restrictions applied; B-no bi-

cycles; E-no equestrians; M-no motorized vehicle; P-permit required for use.

**roadbed**

(1) In railroad construction, the foundation on which the ballast and track rest. (2) In highway construction, the graded portion of a highway within top and side slopes, prepared as a foundation for the pavement structure and shoulder.

**roadcalls for mechanical failure**

*Transit*. A revenue service interruption caused by failure of some mechanical element of the revenue vehicle. Mechanical failures include breakdowns of air equipment, brakes, body parts, doors, cooling system, heating system, electrical units, fuel system, engine, steering and front axle, rear axle and suspension, and torque converters. See also *road call*.

**roadcalls for other reasons**

*Transit*. A revenue service interruption caused by tire failure, farebox failure, wheel chair lift failure, air conditioning system, out of fuel-coolant-lubricant, and other causes not included as mechanical failures. See also *road call*.

**roadway**

(1) The portion of a highway, including shoulders, for vehicular use. (2) That part of a trafficway used for motor vehicle travel.

**roadway element**

*Rail Operations*. That portion of the roadway apparatus of an automatic train stop, train control, or cab signal system, such as electric circuit, inductor, or trip arm to which the locomotive apparatus of such system is directly responsive.

**roadway function class**

The classification describing the character of service the street or highway is intended to provide.

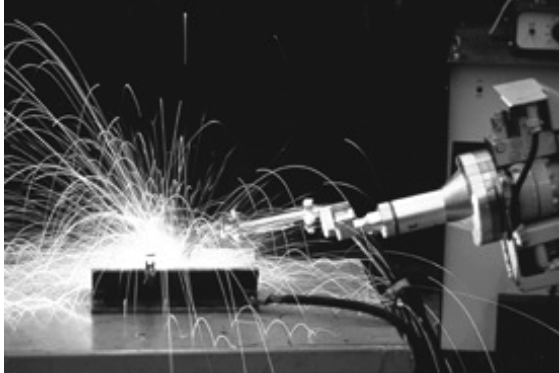
**roast**

To heat to a point somewhat short of fusing in order to expel volatile matter or affect oxidation, e.g., the use of a furnace to heat arsenic plant-feed material for the purpose of eliminating a significant portion of the volatile materials contained in the feed.

**robot**

An electromechanical device which may be equipped with sensing and reacting instru-

mentation and/or equipment, some calculating ability with a set of preprogrammed responses determined by the calculation results, some form of mobility, and the ability to operate autonomously, at least for short periods of time.



*Robot performing assembly function*

### **robotics**

The study, design, manufacturing, development, and/or the use of robots.

### **ROC**

Reactive organic compound. *See also receiver operating characteristic.*

### **rock**

To a hydrologist, both hard consolidated formations (such as sandstone, limestone, granite, or lava rocks), and loose unconsolidated sediments (such as gravel, sand, and clay).

### **rock area**

An area identified as a danger to maritime navigation containing one or more rocks.

### **rock berm**

A mound or strip of stone placed against the side of a structure near the base to act as a buttress.

### **rock cut**

A dredged channel cut through rocky bottom. Requires particularly careful marking with aids to navigation and is generally narrow, requiring extreme caution on the part of the navigator.

### **rock it**

*Transit (slang).* To free vehicle from mud or snow by alternately driving forward and reverse.

### **rocker link**

That portion of an interlocking machine which transmits motion between the latch and the universal link.

### **rocker switch**

A manually activated two-position toggle switch in which two faces are separated by an obtuse angle, and where one of the faces is normally depressed.

### **rocket**

An aircraft propelled by ejected expanding gases generated in the engine from self-contained propellants and not dependent on the intake of outside substances. It includes any part which becomes separated during the operation.

### **Rocky Mountain double**

*Transit (Slang).* A combination vehicle consisting of a tractor, a 45 to 48-foot semitrailer and a shorted 28-foot semitrailer.

### **Rocky Mountain spotted fever**

An infectious disease marked by fever, headache, muscle pain, rash, and mental symptoms. Rocky Mountain spotted fever belongs to a group of insect-borne fevers caused by microscopic parasites known as rickettsiae, which attack the cells lining small blood vessels. Also called *tick fever*.

### **ROD**

*See record of decision.*

### **rod**

(1) A tubular or rod-shaped photosensitive cell which predominates in the peripheral retina and is used in scotopic vision. (2) An ideal long, flat, thin structure which forms part of a lever system.

### **rodenticide**

A chemical or agent used to destroy rats or other rodent pests, or to prevent them from damaging food, crops, etc.

### **roentgen (R)**

A unit of exposure dose of gamma- or x-radiation. It is defined as the quantity of gamma- or x-radiation that will produce (in 0.001293 gram of air [1 cc] at 0°C and 760 mm of Hg pressure) ions carrying one electrostatic unit quantity of electricity of either sign. It is a measure of external exposures to ionizing radiation. One roentgen equals that amount of x-ray or gamma radiation required to produce ions carrying a charge of 1 electrostatic unit (esu) in 1 cubic centimeter of dry air under standard conditions.

**roentgen equivalent man (or mammal) (rem)**

A unit of biological dose of radiation in which the number expressing the relative biological effectiveness (RBE) of radiation is equal to the number of rads absorbed, multiplied by the RBE of the given radiation (for a specified effect). It is the quantity of ionizing radiation of any type that, when absorbed by a human (or other mammal), produces a physiological effect equivalent to that produced by the absorption of 1 roentgen of gamma- or x-radiation.

**roentgen equivalent physical (rep)**

A unit of ionizing radiation corresponding to that amount which results in soft tissue absorption of 93 ergs per gram.

**roentgenography**

See *radiography*.

**roll**

To have or cause rotation about a longitudinal or fore-aft axis of a vehicle.

**roll and rest**

*Transit (slang)*. When a long-haul driver drives and stops at regular intervals to sleep.

**roll bar**

A heavy metal tube formed to approximate the cabin boundary of a vehicle to prevent crushing of the cabin for occupant protection in the event of the vehicle rolling over.

**roll cloud**

A turbulent cumuliform type of cloud that forms on the leeward side of large mountain ranges. The air in the cloud rotates about an axis parallel to the range. Also referred to as an *arcus cloud*.

**roll on/roll off**

(1) A method of ocean cargo service using a vessel with ramps which allows wheeled vehicles to be loaded and discharged without cranes. (2) Ships which are especially designed to carry wheeled containers trailers, or other wheeled cargo, and use the roll-on/roll-off method for loading and unloading.

**roll vessel**

A vessel designed to permit rail cars or highway trailers to move from the terminal to the vessel over a ramp, with a switch engine as motor power to move the containers.

**roller dam**

A dam constructed of a series of concrete piers across the river with a series of steel cylindrical drums between each pier. These drums are rolled up and down an inclined gear track in the piers, thus controlling the flow of water through the dam. Water passes under the rollers rather than over the top as in a fixed or wicket dam.

**roller gate**

A gate designed to control the flow of water through a roller dam.

**rolling equipment**

Includes locomotives, railroad cars, and one or more locomotives coupled to one or more cars.

**rolling stock**

The vehicles used in a transit system, including buses and rail cars.

**rollover**

Rollover is defined as any vehicle rotation of 90 degrees or more about any true longitudinal or lateral axis. See also *accident and jackknife*.

**rolltop**

A trailer with a sliding roof to permit crane loading.

**ROM**

(1) Read only memory. The resident memory residing in a computer system that cannot be altered or adjusted. It holds the basic initiation routines and commands that are necessary for basic system performance. (2) See *range of motion*.

**roofing bracket**

A bracket used in sloped roof construction, having provisions for fastening to the roof or supported by ropes fastened over the ridge and secured to some suitable object.

**room criterion curve (RC)**

A sound pressure level guide for heating, ventilation, and air conditioning systems designed to produce a bland, non-disturbing sound.

**room surface dirt depreciation**

The reduction of reflected light from room surface walls, ceilings, and floors due to accumulated dirt; a recoverable light loss factor.

**root-cause analysis**

With regard to compliance: An analysis which looks beyond superficial symptoms or underlying factors contributing to or causing shortcomings or failures in the system. It looks at something that occurred and asks what could have been done to have prevented it from happening in the first place.

**root mean square (rms)**

Square root of the arithmetic mean of the squares of a set of values of a function of time or other variable.

**root mean square sound pressure**

See *effective sound pressure*.

**root of a dike**

The portion of the dike that abuts the adjacent shore.

**Rossby waves**

See *long waves in the westerlies*.

**rot**

See *decay (4)*.

**rotameter**

A flow metering device, consisting of a precision bored, tapered, transparent tube with a solid float inside. With air flowing through the device, the float rises inside the tube until the pressure drop across the annular area between the float and tube wall is just sufficient to support the float. A rotameter is considered a secondary calibration standard and must be calibrated against a primary standard to obtain accurate results.

**rotary pedal**

A foot-operated device which operates with a pair of pedals moving in a common direction about a shaft capable of continuous rotation.

**rotary switch**

A switch which operates by being turned about a central shaft.

**rotate**

To cause or experience an angular change in position of a non-axial point about one or more axes of an object.

**rotating airport beacon**

*Aviation.* A visual navigation aid (NAVAID) operated at many airports. At civil airports, alternating white and green flashes indicate the location of the airport. At military airports, the beacons flash alternately white and

green, but are differentiated from civil beacons by dual peaked (two quick) white flashes between the green flashes.

**rotating shift**

A work schedule that has one or more individuals who work one shift for a period of time, then another shift, etc. in a cyclic manner.

**rotation**

The reassignment of vehicles either within or between agencies to equalize mileage.

**rotational acceleration**

See *angular acceleration*.

**rotational axis**

A defined line about which instantaneous angular motion takes place.

**rotational dynamics**

The study of the causes of rotation.

**rotational kinematics**

The description motion, without regard to cause.

**rotational velocity**

See *angular velocity*.

**rotator**

Any muscle which moves a bone around its longitudinal axis.

**rotator cuff**

A combination of the three muscles involved in rotating the arm and shoulder, the subcapularis, supraspinatus, and teres minor.

**rotor**

See *brush aerator*.

**rotor cloud**

A turbulent cumuliform type of cloud that forms on the leeward side of large mountain ranges. The air in the cloud rotates about an axis parallel to the range.



*A rotorcraft (in this case, a helicopter) prepares to land*



**rotorcraft**

A heavier-than-air aircraft that depends principally for its support in flight on the lift generated by one or more rotors.

**rotorcraft load combination**

The combination of a rotorcraft and an external load, including the external load attaching means.

**rotorcraft load combination Class A**

A rotorcraft load combination means one in which the external load cannot move freely, cannot be jettisoned, and does not extend below the landing gear.

**rotorcraft load combination Class B**

A rotorcraft load combination means one in which the external load is jettisonable and is lifted free of land or water during the rotorcraft operation.

**rotorcraft load combination Class C**

A rotorcraft load combination means one in which the external load is jettisonable and remains in contact with land or water during the rotorcraft operation.

**rotorcraft load combination Class D**

A rotorcraft load combination means one in which the external load is other than a Class A, B, or C and has been specifically approved by the [Federal Aviation Administration (FAA)] Administrator for that operation.

**rotors**

Turbulent eddies that form downward of a mountain chain, creating hazardous flying conditions.

**rough fish**

Those fish, not prized for eating, such as gar and suckers. Most are more tolerant of changing environmental conditions than game species.

**round shoulders**

A posture in which the shoulders are drooped forward and the thoracic spine has increased convexity.

**round window**

A round-shaped osseous opening in the temporal bone which is covered by the secondary tympanic membrane, forming the terminus of the scala tympani of the cochlea at the junction with the middle ear. *See also oval window.*

**roundabout**

Area of water subject to a routing measure restricting ship movement to a counterclockwise direction.

**roundworm**

One of various types of parasitic nematode worms, somewhat resembling the common earthworm, which sometimes invade the human intestinal tract and multiply there. Very common among them is the pinworm, or seatworm, which infects 10 percent of the population of North America. Others include the ascarids, the hookworm, and the trichina, which causes trichinosis. These worms can impair health to varying degrees, but proper treatment will generally eliminate them.

**route**

(1) The course or way which is, or is to be, traveled. (2) A designated path through a road network. (3) A defined path, consisting of one or more courses in a horizontal plane, which aircraft traverse over the surface of the earth.

**route locking**

*Rail Operations.* Electric locking, effective when a train passes a signal displaying an aspect for it to proceed, which prevents the movement of any switch, movable-point frog, or derail in advance of the train within the route entered. It may be so arranged that as a train clears a track section of the route, the locking affecting that section is released.

**route miles**

The total number of miles included in a fixed route transit system network.

**route of entry**

There are a number of routes by which a chemical or infectious substance can enter the body. The three primary routes are inhalation or breathing (the most common since everyone has to breathe), ingestion (eating or drinking), and absorption through the skin. In addition, a less common route is through injection (a sharp object such as a needle, metal corner, or piece of glass that has been contaminated with a chemical or infectious substance pierces the skin and injects the material directly into the bloodstream). Other routes, commonly used in animal studies, are intraperitoneal, intravenous, intramuscular, gastric

lavage, and ocular. *See also portal of entry.*  
Also known as *routes of exposure.*

**route segment**

A part of a route. Each end of that part is identified by a continental or insular geographical location; or a point at which a definite radio fix can be established.

**routes of exposure**

*See route of entry.*

**routine analytical services**

The set of Contract Laboratory Program (CLP) analytical protocols that are used to analyze most Superfund site samples. These protocols are provided in the EPA Statements of Work for the CLP (SOW for Inorganics; SOW for Organics) and must be followed by every CLP laboratory.

**routine maintenance**

The performance of one or more maintenance functions after a certain period of time or after a certain amount of use. Also called *scheduled maintenance* or *planned maintenance.*

**routine monitoring**

Involves the frequent and regular industrial hygiene sampling for determining employees' exposure to a substance to which personnel are somewhat routinely exposed or with which they work frequently.

**row**

The horizontal set of numbers in a matrix. Also, the horizontal alphanumeric characters in a table.

**RPAR**

Rebuttable presumption against registration.  
*See special review.*

**RPE**

*See rating of perceived effort.*

**RPG**

*See radiation protection guide.*

**rpm**

Revolutions per minute.

**RPM**

*See remedial project manager. See also Respirable Particulate Mass and revenue passenger miles.*

**RPM-TLV**

*See Respirable Particulate Mass TLV.*

**RPO**

*See radiation protection officer.*

**RPZ**

*See runway protection zone.*

**RQ**

*See reportable quantity. See also respiratory quotient.*

**RRT**

*See regional response team.*

**RSA**

*See runway safety area.*

**RSD**

*See risk specific dose.*

**RSO**

Radiation safety officer. *See also radiation protection officer.*

**RSPA**

*See Research and Special Programs Administration.*

**RTECS**

*See Registry of Toxic Effects of Chemical Substances. See also Residential Transportation Energy Consumption Survey.*

**rubber itch**

An allergic reaction causing itching and redness of the skin resulting from exposure to rubber or rubber products. *See industrial dermatitis.*

**rubbing stake (or timber)**

A timber, or timbers, usually parallel to the water surface, used as fenders along which boats or barges may slide, or rub, without damage to the craft or permanent structure.

**rubbish**

A general term for solid waste, excluding food waste and ashes, from homes, commercial establishment, institutions, and workplaces.

**rubella**

A mild systemic disease caused by a virus and characterized by fever and a transient rash. Also called German measles and 3-day measles. Rubella begins with a slight cold, some fever, and a sore throat. The lymph nodes just behind the ears and at the back of the neck may swell, causing some soreness or pain when the head is moved. The rash appears first on the face and scalp, and spreads to the body and arms the same day. Rubella rash is

similar to that of measles, although the spots usually do not run together. The rubella rash fades after 2 or 3 days, although in a few cases the disease may last as long as a week.

**ruby**

A gemstone consisting of a high quality red corundum.

**ructus**

A condition in which gas is belched from the stomach.

**ruggedized**

*(slang)*. Capable of withstanding a certain level of mechanical shock or vibration without damage to the unit or its components.

**rugitis**

A condition in which the intestines make a rumbling sound.

**rule**

An established guide or procedure for action.

**rule-based behavior**

A cognitive operating mode in which the individual consciously attempts to perform some task in a situation for which clearly pre-established rules exist.

**rule of 80-20**

See *Pareto's Law*.

**rule of reasonable certainty**

This rule permits recovery of damages only for such future pain and suffering as is reasonably certain to result from an injury.

**rulemaking**

*Regulations*. The authority delegated to administrative agencies by Congress or state legislative bodies to make rules that have the force of law. Frequently, statutory laws that express broad terms of a policy are implemented more specifically by administrative rules, regulations, and practices.

**Rules Enabling Act of 1934**

Federal statute that delegated comprehensive procedural rulemaking power to the Supreme Court and resulted in the Federal Rules of Civil Procedure.

**Rules of Civil Procedure**

Federal Rules of Civil Procedure govern procedures in the U.S. District Courts in all suits of a civil nature whether cognizable as cases at law or in equity or in admiralty with some exceptions.

**Rules of Criminal Procedure**

Federal Rules of Criminal Procedure govern the procedure in all criminal proceedings in the U.S. District Courts, including preliminary, supplementary, and special proceedings before the U.S. magistrates.

**Rules of Evidence**

Rules of court which govern the admissibility of evidence at trials and hearings.

**rules of the road**

Statutory and regulatory rules governing the operations of vehicles, including the navigation of vessels.

**rump**

*(slang)*. The region of the body near the bottom of the spine, including the buttocks.

**run**

A type of gait in which both feet may be off the ground simultaneously within a stride cycle, generally consisting of the following phases: a) support phase (foot strike, mid-support, takeoff); b) recovery phase (follow-through, forward swing, foot descent. See also *gait*.

**run-in phase**

That time in which a machine or system is operated either when new or after a period of maintenance and in which the probability of failure is highest.

**run-off**

(1) That part of precipitation, snow melt, or irrigation water that runs off the land into streams or other surface water. It can carry pollutants from the air and land into receiving waters. (2) That portion of the precipitation that flows over the land surface and ultimately reaches streams to complete the water cycle. Melting snow is an important source of this water as well as all amounts of surface water that move to streams or rivers through any given area of a drainage basin. See also *run-off*.

**run-out time**

The time period required by machine tools between the point at which cutting completion occurs and the point at which the tool and materials are free of interference so the next operational sequence can begin.

**runaway truck ramp**

A short inclined roadway constructed of sand or other unconsolidated material that exits gradually from and generally runs adjacent to the right lane of a descending highway, expressly for the purpose of stopping runaway trucks.

**rungs**

With regard to ladders, the cross-pieces of circular or oval cross-sections on which a person may step in ascending or descending the ladder.

**runner**

The lengthwise horizontal bracing or bearing members (or both) on a scaffold.

**running clearance**

The distance from the surface on which an automobile is standing to the lowest point on the automobile, excluding unsprung weight.

**running track**

*Rail Operations.* A track providing end-to-end line continuity and used for working regular trains between stations or places indicated in tariffs as independent points of departure or arrival for the conveyance of passengers or goods.

**runoff**

The water from all tributaries that enters into a river. *See also* [run-off](#).

**runway**

(1) *General.* A passageway for persons, elevated above the surrounding floor or ground level, such as a foot walk along shafting or a walkway between buildings. (2) *Aviation.* a) A designated area for the movement of air traffic (takeoff and landing). b) A straight path on land, used for the landing and takeoff of aircraft. c) A defined rectangular area on an airport prepared for the landing or takeoff of airplanes.

**runway blast pad**

A surface adjacent to the ends of runways provided to reduce the erosive effect of jet blast and propeller wash.

**runway incursion**

Any occurrence at an airport that involves an aircraft, vehicle, person, or object on the ground that creates a collision hazard or results in loss of separation with an aircraft taking off, intending to takeoff, landing, or

intending to land. Note: Runway incursions result from one of the following four types of airport surface occurrences: pilot deviations, operational errors, vehicle operator/pedestrian deviations, and pilot/vehicle operator/pedestrian judgmental errors). *See also* [operational deviation](#), [operational error](#), [pilot deviation](#), and [vehicle/pedestrian deviation](#).

**runway obstacle free zone**

The runway obstacle free zone (OFZ) is a defined volume of airspace centered above the runway. The runway OFZ is the airspace above a surface whose elevation at any point is the same as the elevation of the nearest point on the runway centerline. The runway OFZ extends 200 feet beyond each end of the runway. The width is as follows: 1) for runways serving large airplanes, the greater of a) 400 feet, or b) 180 feet, plus the wingspan of the most demanding airplane plus 20 feet per 1,000 feet of airport elevation; 2) for runways serving only small airplanes, a) 300 feet for precision instrument runways, b) 260 feet for other runways serving small airplanes with approach speeds of 50 knots or more; c) 120 feet for other runways serving small airplanes with approach speeds of less than 50 knots. *See also* [inner-approach obstacle free zone](#), [inner-transitional obstacle free zone](#), and [obstacle free zone](#).

**runway protection zone (RPZ)**

An area off the runway end (formerly the clear zone) used to enhance the protection of people and property on the ground.

**runway safety area (RSA)**

A defined surface surrounding the runway prepared or suitable for reducing the risk of damage to airplanes in the event of an undershoot, overshoot, or excursion from the runway.

**runway transgression**

Any erroneous occupation of a runway at a controlled airport by an aircraft or other controlled vehicle.

**runway type**

A runway use classification related to its associated aircraft approach procedure.

**rupture disk**

The operating part of a pressure relief device which, when installed in the device, is de-

signed to rupture at a predetermined pressure and permit discharge of the contents.

**ruptured disk**

A condition in which the nucleus pulposus of the intervertebral disk protrudes through the surrounding fibrous tissue.

**rural**

Usually refers to areas with population less than 5,000.

**rural area**

(1) Outside the limits of any incorporated or unincorporated city, town, village, or any other designated residential or commercial area such as a subdivision, a business or shopping center, or community development.  
(2) Includes all areas of a state outside of the Federal Highway Administration (FHWA) approved adjusted census boundaries of small urban and urbanized areas.

**rural arterial routes**

Those public roads that are functionally classified as a part of the rural principal arterial system or the rural minor arterial system as described in volume 20, appendix 12, Highway Planning Program Manual.

**rural highway**

Rural highway is any highway, road, or street that is not an urban highway.

**rural major collector routes**

Those public roads that are functionally classified as a part of the major collector subclassification of the rural collector system as described in volume 20, appendix 12, Highway Planning Program Manual.

**rutherford (rd)**

A unit for radioactive decay equal to  $10^6$  disintegrations per second.

**RVP**

See *Reid vapor pressure*.

# S

## s

Second.

### sabin

A unit of measure of sound absorption.

### saccade

A rapid movement of the eyes from one fixation point to another. Also referred to as *saccadic eye movement*.

### saccharin

A white, crystalline compound several hundred times sweeter than sucrose. Used as a non-caloric sweetening agent.

### sacculle

An expanded chamber within the vestibular apparatus.

### sacral spine

See *sacrum*.

### sacroiliac

Pertaining to the sacrum and the ilium, and the joint formed by these two bones, or the lower part of the back where these bones meet on both sides of the back. The ilium is the upper part of the hip bone. The sacrum, near the end of the spine, forms a wedge-shaped joint within the open portion of the ilium. The tight joint allows little motion and is subject to great stress, as the body's weight pushes downward and the legs and pelvis push upward against the joint. The sacroiliac joint must also bear the leverage demands made by the trunk of the body as it turns, twists, pulls, and pushes. When these motions, especially during weight lifting, place an excess of stress on the ligaments that bind the joint and on the connecting muscles, strain may result.

### sacrospinalis

A collection of muscle groups located in the back and aligned parallel to the spine. It is necessary for maintaining erect posture, extending the spine, and bending the spine to the side. Also referred to as *spinal erector*.

### sacrum

The triangular bone near the base of the spine formed by the fusion of the five sacral vertebrae. Also referred to as *sacral spine*.

### SAD

See *seasonal affective disorder*.

### saddle-mount

*Transit*. A device, designed and constructed as to be readily demountable, used in drive-away-towaway operations to perform the functions of a conventional fifth wheel.

### saddle tank

Fuel storage area on a tractor.

### SADT

See *Self-accelerating decomposition temperature*.

### SAE

Society of Automotive Engineers.

### safe

(1) A condition or situation that is free from hazards to health. (2) Relatively free from the risk of danger, injury, or damage. (3) A metal receptacle for the preservation of valuables.

### safe & arm (S&A) device

A device that provides mechanical interruption (safe) or alignment (arm) of the explosive train and electrical interruption (safe) or continuity (arm) of the firing circuit.

### safe/arm plug

Normally two plugs: the ARM plug is inserted in the firing circuit to provide continuity. The ARM plug is removed and the SAFE plug inserted that shorts the electroexplosive device (EED) leads and provides static bleed capability, although some circuits have this protection inherent in their design. Shorting plugs and connectors that are placed on EED leads after disconnecting the cable are not the same as safing plugs, although they may perform similar functions.

### safe day

A work day in which there were no lost time injuries.

### safe limit of speed

As regards limitation on speed of automobiles at crossings, the limit at which one may discern an approaching train and stop before he/she is in the danger zone.

### safe place to work

In the law of master and servant (employer and employee), a place in which the master has eliminated all danger which in the exercise of reasonable care the master should re-



move or guard against. The master's duty to provide a "safe place" to work includes places to and from which the employee might be required or expected to go.

**safety**

(1) A measure of the degree of freedom from risk or conditions that can cause death, physical harm, or equipment or property damage. (2) The development of systems and techniques to ensure that individuals in occupational settings and their environment are relatively free from conditions that could cause death or serious physical harm. (3) The proper handling of a substance or conduct of a task to eliminate its capacity to cause injury or do harm. (4) The practice of eliminating or minimizing and/or the freedom from conditions which may cause injury, illness, or death to personnel, damage to or loss of equipment or property, and/or loss of time.

**safety alert**

*Aviation.* A safety alert issued by Air Traffic Control (ATC) to aircraft under their control.

**Safety Appliance Act**

Federal act regulating the safety of equipment used by common carriers engaged in interstate commerce.

**safety belt**

Any strap-like object worn about the waist region which attaches an individual to a secure structure and is intended to reduce or prevent injury in the event of an accident.

**safety coupling**

A friction coupling set to slip at a controlled torque, thereby protecting the remainder of a system from overload.

**safety critical**

Any condition, event, operation, process, equipment, or system with a potential for major injury or damage.

**safety cut-out**

A device to protect from overload in an electrical circuit.

**safety defect**

*U.S. Coast Guard.* A defect in a product subject to the provisions of the 46 U.S.C. Chapter 43, which creates a substantial risk of personal injury to the public. The defective part or area may be under the provisions of 46 (U.S.C.) Chapter 43, and if so regulated, may

or may not be in compliance with that standard.

**safety education**

The transmission of information, skills, and attitudes dealing with environmental safety requirements to interested parties with the intent of producing favorable behavior changes.

**safety engineering**

Discipline concerned with the planning, development, implementation, maintenance, and evaluation of the safety aspects of equipment, the environment, procedures, operations, and systems to achieve effective protection of people and property.

**safety factor**

The ratio of design burst pressure over the maximum allowable working pressure (MAWP) or design pressure; it can also be expressed as the ratio of tensile or yield strength over the maximum allowable stress of the material. *See also design safety factor.*

**safety glass**

Any glass which is shatterproof or which breaks into granules rather than sharp strands.

**safety harbor**

An area which has been cleared of tree stumps before impoundment of the pool and in which a safe project depth is guaranteed for the mooring of vessels. *First-class* safety harbors are marked with orange boards. A *second-class* harbor has project depth only at pool stage, whereas the first-class harbor maintains project depth even at drawn down winter levels of the pool. The term is peculiar to the Tennessee River.

**safety harbor landing markers**

White arrow-shaped boards pointing in the direction of cleared areas safe for mooring in demand reservoirs (used only on the Tennessee River). They indicate that the site has been cleared of tree stumps to a specified depth.

**safety helmet**

A hard, rigid headgear designed to protect the wearer's head from impact, electric shock, and/or flying particles. Also commonly referred to as a *safety hat*. *See also hard hat.*

**safety kernel**

An independent computer program that monitors the state of a system to determine when po-

tentially hazardous system states occur or when transitions to potentially hazardous system states occur. The safety kernel is designed to prevent the system from entering the hazardous state and return it to a known safe state.

**safety landing**

Similar to safety harbor except that it consists of a small cleared area along the bank. Found only on the Tennessee River at present.

**safety lock**

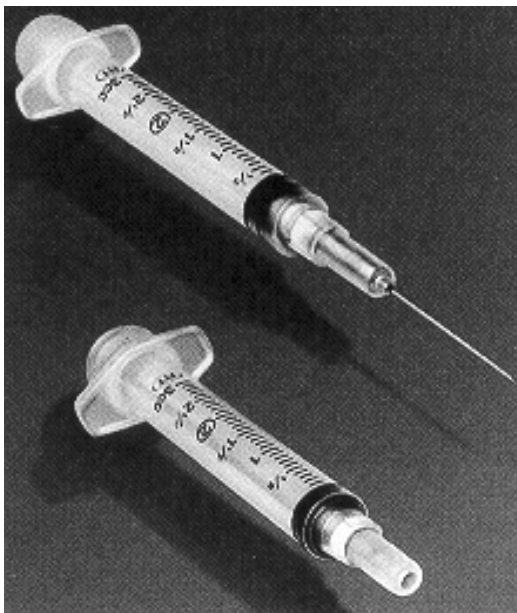
Any lock which can only be opened by using its own key.

**safety margin**

See *margin of safety*.

**safety needle**

*Medical.* A hypodermic syringe with an affixed needle that is totally contained in a plastic sheath until it is pressed against the patient's skin at the time of injection. After use, the self-retracting needle returns to the protective sheath. This device virtually eliminates the possibility of a needle-stick injury to the health care professional before, during, or after use. This "safety device" is an excellent example of an engineering control approach to hazard risk reduction and risk management.



*Safety needles. Top syringe shows needle in extended position; bottom syringe shows needle in retracted (safe) position.*

**safety professional**

An individual who, by virtue of specialized knowledge, skill, and educational accom-

plishments, has achieved professional status in the safety field.

**safety relief valve**

A valve fitted on a pressure vessel, or other containment under pressure, to relieve overpressure.

**safety rule**

A written requirement stating personal protective gear to be worn, safe behavior, or other safeguards to be taken in certain activities.

**safety shoe**

Any of a variety of shoe types with safety features specific to certain environments, such as steel-toes, steel-soles, or spark-preventing design.

**safety standard**

Those standards designed to protect employees from hazards such as slips, trips and falls, lacerations and amputation from using machinery, fire hazards, and so on.

**safety stock**

That inventory comprised of reserves in the case of unanticipated events which can prevent re-supply.

**safety tongs**

A gripping device with an extended arm/reach for placing objects into or removing them from a hazardous area.

**safety training**

Any training associated with the safety aspects of the home, job, workplace, or other aspects of living or working, possibly specifically including any potential hazards and their relationships to a particular individual or group.

**Saffir/Simpson Scale**

See *hurricane*.

**sagittal**

Pertaining to any plane parallel and lateral to the midsagittal plane.

**sagittal arc**

The surface distance over the top of the head from glabella to nuchale. Measured over the hair with compression and with the scalp muscles relaxed.

**sailboat**

Craft intended to be propelled primarily by sail, regardless of size or type.

**sailing line**

A printed course line appearing on river charts showing the recommended general course at the time the chart was issued. Usually out of date for open rivers; the navigator should consult the latest channel reports.

**sailor's skin**

That skin, especially on the back of the hands which has extensive pigmentation and may lead to squamous cell carcinoma. Also referred to as *farmer's skin*.

**Saint Lawrence Seaway Development Corporation (SLSDC)**

Established by act of May 13, 1954 (33 U.S.C. 981-990) as an operating administration of the Department of Transportation. The Corporation, a wholly Government-owned enterprise, is responsible for the development, operation, and maintenance of that part of the St. Lawrence Seaway between the port of Montreal and Lake Erie, within the territorial limits of the United States. The function of the Seaway Corporation is to provide a safe, efficient, and effective water artery for maritime commerce, both in peacetime and in time of national emergency.

**sales-weighted miles per gallon**

Calculation of a composite vehicle fuel economy based on the distribution of vehicle sales.

**salicylic acid**

A hydroxyl derivative of benzoic acid. In its pure form, it is used as a keratolytic agent to induce peeling of skin or skin lesions. It is prepared in ointments, creams, and collodions containing from 3 to 20 percent salicylic acid, depending on the effect desired. The sodium salt of salicylic acid, sodium salicylate, is used mainly as an antirheumatic and antipyretic. Acetylsalicylic acid (aspirin) is a widely used analgesic, antipyretic, and antirheumatic. Since salicylic acid is an irritant to skin and mucous membranes, preparations taken internally may produce gastrointestinal upsets with prolonged use or overdosage.

**saline**

A solution of salt (sodium chloride) in water.

**salinity**

The degree of salt in water.

**saliva**

A secretion of various glands in the mouth which aids in the digestion of food.

**salivary gland**

One of the glands in the mouth that secrete saliva. The major ones are the three pairs of glands known as the parotid, submaxillary, and sublingual glands. There are other smaller salivary glands within the cheeks and tongue. The saliva is needed to moisten the mouth, to lubricate food for easier swallowing and to provide the enzymes necessary to begin food breakdown in the preliminary stage of digestion. The salivary glands produce about 3 pints of saliva daily. The salivary glands are controlled by the nervous system. Normally they respond by producing saliva within 2 or 3 seconds after being stimulated by the sight, smell, or taste of food. This quick response is a reflex action.

**Salmonella**

A genus of *Schizomycetes* including the typhoid-paratyphoid bacilli and bacteria usually pathogenic for lower animals which are often transmitted to man.

**Salmonella test**

See *Ames test*.

**salt**

(1) Sodium chloride. (2) Any reaction product in the neutralization between an chemical acid and base.

**salt water intrusion**

The invasion of fresh surface or groundwater by salt water. If the salt water comes from the ocean it may be called sea water intrusion.

**saltation**

The bounding movement of sand and small particles along the surface due to the wind.

**saltatory conduction**

The jumping of the neural impulse along a myelinated axon from one node of Renvier to the next. Greatly increases the speed of neural impulse conduction.

**salts**

Minerals that water picks up as it passes through the air, over and under the ground, and as it is used by households and industry.

**salty**

Having a taste resembling salt or sodium chloride.

**salutary**

Pertaining to health or a state of well-being.

**salvage**

The utilization of waste materials.

**same evidence test**

The "same evidence test" used in determining an issue of double jeopardy is whether the facts alleged in a second indictment, if introduced in evidence, would have sustained a conviction under the first indictment or whether the same evidence would support a conviction in each case.

**SAMMIE**

See *System for Aiding Man-Machine Interaction Evaluation*.

**sample**

(1) *Industrial Hygiene*. A process consisting of the withdrawal, isolation, or concentration of a fractional part of a whole as related to environmental media such as air, water, soil, or other liquid, solid, or gas, for analysis by acceptable procedures. Samples can be either cumulative (i.e., collected over time), in which the resulting gas is expressed as a time-weighted average, or instantaneous. The sample must be random, and representative of the exposure of the individual sampled, as well as collected in an acceptable manner so that it can be compared to an established exposure standard. (2) *Statistics*. The part or subset of a population that is selected for statistical analysis.

**sample blank**

The gross instrument response attributable to reagents, solvents, and the sample media used in air sampling and subsequent analysis of samples. See also *blank sample*.

**sample draw**

*Sampling*. Refers to the procedure and method used to cause the deliberate flow of the atmosphere being monitored to a sensing element. See also *active sampling*.

**sample management office**

EPA contractor providing management, operational, and administrative support to the CLP to facilitate optimal use of the program.

**sample parameters**

Estimators of population parameters such as the mean, standard deviation, etc., and are based on observations of a subset of the population.

**sample quantitation limit (SQL)**

Quantity of a substance that can be reasonably quantified given the limits of detection of the methods of analysis and sample characteristics that may affect quantitation (for example, dilution, concentration).

**sample size**

The number of cases required or used within a sample.

**sample storage stability**

It is the period of time, in days, over which storage losses of analytes are generally less than 10%, provided that storage and shipment precautions are observed. It is determined by collecting a number of samples at the level of concern (e.g., the TLV) at room temperature and about 80% relative humidity and subsequently analyzing sets of these samples (e.g., about six in each set) over a 2-week or longer period to determine losses that may occur during storage. See also *storage loss*.

**sampling**

(1) *Transit*. A statistical technique for the collection of passenger mile data. The sampling technique may be one of the FTA approved procedures or an alternative methodology which meets FTA's requirements for the statistical reliability (95% confidence and 10% precision). (2) See *environmental sampling*.

**sampling and analysis plan**

Consists of a Quality Assurance Project Plan (QAPP) and a Field Sampling Plan (FSP).

**sampling and analytical method bias**

An estimate of accuracy for the sampling and analytical method as determined by sampling a test atmosphere and analyzing the sampling media. The net bias for a given concentration is the difference level and the sampling method concentration, expressed as a percentage of the true test atmosphere concentration.

**sampling error**

The difference between the mean of a population and a sample mean.

**sampling frequency**

The time interval between the collection of successful samples.

**sampling media**

See *media (3)*.

**sampling period**

The length of time over which a sample is collected.

**sampling train**

Generic term used to describe the combination of collection media, sampling pump, tubing, and a flow rate measuring device.

**San Joaquin Valley fever**

See *desert fever*.

**sand digger**

*Maritime (slang)*. A dredge engaged in obtaining sand and gravel from the riverbed.

**sand dune**

A hill or ridge of loose sand shaped by the winds.

**sand filters**

Devices that remove some suspended solids from sewage. Air and bacteria decompose additional wastes filtering through the sand so that cleaner water drains from the bed.

**sand ripple**

Wavelike patterns on sand that form perpendicular to the average wind flow.

**sandblasting**

A method for cleaning surfaces employing sand as the abrasive material. This term is also used in a generic sense for abrasive cleaning operations

**sandfly**

Various two-winged flies, especially those of the genus *Phlebotomus*, which are important vectors in the transmission of leishmaniasis and phlebotomus fever, which is known also as sandfly fever.

**sanitary landfill**

A facility for the disposal of solid waste which meets the criteria of the Federal Solid Waste Disposal Act.

**sanitary sewers**

Underground pipes that carry off only domestic or industrial waste, not storm water.

**sanitary survey**

An on-site review of the water sources, facilities, equipment, operation, and maintenance of a public water system to evaluate the adequacy of those elements for producing and distributing safe drinking water.

**sanitary wastewater**

See *domestic wastewater*.

**sanitation**

The formulation and application of measures designed to protect the public health. The control of those factors in the environment that can harmfully affect the development, health, or survival of humans.

**sanitize**

To reduce the level of microbial contaminants below some level.

**sanitizer**

One of three groups of antimicrobials registered by the EPA for public health uses. The EPA considers an antimicrobial to be a sanitizer when it reduces but does not necessarily eliminate all the microorganisms on a treated surface. To be a registered sanitizer the test results for a product must show a reduction of at least 99.9% in the number of each test microorganism over the parallel control.

**Santa Ana wind**

A warm, dry wind that blows into southern California from the east off the elevated desert plateau. Its warmth is derived from compression heating.

**sap**

The natural fluid substance of animal or vegetable tissue.

**saprophyte**

A plant that lives on and derives its nourishment from dead or decaying organic matter. A saprophytic organism is one that can obtain nourishment from nonliving organic materials.

**SAR**

Specific absorption rate. See also *search and rescue*.

**SAR facility**

A regular Reserve operated or augmented, or Auxiliary operated Coast Guard unit, such as an air station, small boat station, base (or support center), group/section, or other shore unit which has search and rescue as a primary mission. See also *search and rescue*.

**SARA**

See *Superfund Amendments and Reauthorization Act*.

**sarcolemma**

The cell membrane of a muscle fiber.

**sarcoma**

Malignant neoplasm composed of cells imitating the appearance of supportive and lymphatic tissues.

**sarcomere**

The basic longitudinal structural unit of a muscle cell.

**sarcoplasm**

The cytoplasm of a skeletal muscle cell.

**SAS**

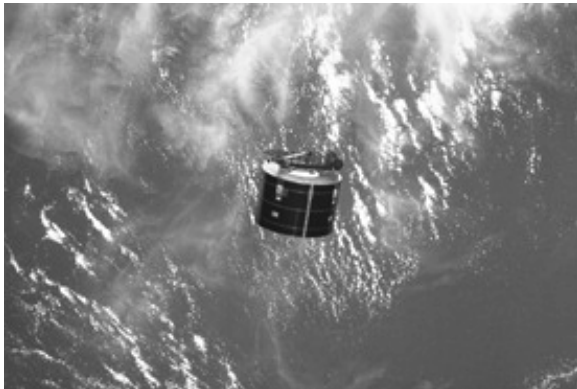
See *space adaptation syndrome*.

**sash**

A movable panel or door set in a ventilation hood entrance to form a protective shield and to control the face velocity of air into the hood.

**satellite**

(1) *Genetics*. A knob of chromatin connected by a stalk to the short arm of certain chromosomes. (2) *Medical*. A minor, or attendant, lesion situated near a large one. (3) *Aerospace*. A body that revolves around a larger body, such as the moon revolving around the earth, or a manmade object revolving about any body such as the sun, earth, or moon.



*A communication satellite in orbit around the Earth*

**satisfactory evidence**

Such evidence as is sufficient to produce a belief that the thing is true; credible evidence.

**saturated**

The point at which the maximum amount of matter can be held in solution at a given temperature.

**saturated air**

Air containing saturated water vapor with both the air and water vapor at the same dry bulb temperature.

**saturated steam**

Steam at the boiling temperature corresponding to the pressure at which it exits.

**saturated zone**

A subsurface area in which all pores and cracks are filled with water under pressure equal to or greater than that of the atmosphere.

**saturation**

The point at which the maximum amount of material can be held in solution at a given temperature.

**saturation of air**

An atmospheric condition whereby the level of water vapor is the maximum possible at the existing temperature and pressure.

**saturation vapor pressure**

The maximum amount of water necessary to keep moist air in equilibrium with a surface of pure water or ice. It represents the maximum amount of water vapor that the air can hold at any given temperature and pressure. See also *equilibrium vapor pressure*.

**savanna**

A tropical or subtropical region of grassland and drought-resistant vegetation.

**Saybolt universal seconds (SUS)**

Unit for measuring the viscosity of light petroleum products and lubricating oils. The term *Saybolt seconds universal* or *SSU* is also used.

**SBA**

See *Small Business Administration*.

**SBS**

See *sick building syndrome*.

**scabies**

Contagious skin disease caused by a mite and characterized by intense itching. Sometimes called "the itch," scabies is most likely to erupt in folds of the skin, as in the groin, beneath the breasts, or between the toes or fingers.

**scaffold**

Any temporary elevated platform and its supporting structure used for supporting workers or materials or both.



**scala tympani**

The inferior portion of the osseous spiral of the cochlea.

**scala vestibuli**

The superior portion of the osseous spiral of the cochlea.

**scalar**

A quantity which has only a magnitude.

**scale**

(1) Some proportion of size with respect to full or normal size. (2) A device for measuring weight. (3) A set of marks at measured distances. (4) A thin flake or compacted plate-like body, as of epithelial cells. (5) To remove incrustations or other material from a surface, as from the enamel of teeth.

**scalenus anterior syndrome**

A sensation of weakness, numbness, or pain in the arm, due to compression of nerves and blood vessels supplying the arm by the scalenus anterior muscle.

**scales of motion**

The hierarchy of atmospheric circulation from tiny gusts to giant storms.

**scan**

(1) To convert text and/or graphics from hard-copy form to electronic form. (2) To search a region of something for one or more particular details.

**Scanlon Plan**

A system for encouraging productivity improvement as measured by the increase in the ratio of the total sales value of the items being produced and redistributing the gains in some proportion to the employees and the company.

**scanning electron microscope (SEM)**

A microscope which utilizes an electron beam that is directed at a sample to produce a reflected image of the sample material onto a screen from which fibers can be identified and counted. Also called *scalenus anticus syndrome*.

**SCAP**

See *Superfund Comprehensive Accomplishment Plan*.

**SCAPE**

See *self-contained atmospheric protective ensemble*.

**scaphoid bone**

See *navicular bone*.

**scaphoid tubercle**

A lateral protuberance on the scaphoid bone which serves as an anatomical reference point in locating the wrist joint.

**scapula**

A large, triangular-shaped flat bone, the superior-lateral portion of which forms part of the shoulder joint.

**scar**

(1) To set up or engineer/design a system/component for the installation of additional items in the future. (2) A residual mark in the tissue after an injury or other invasive event.

**scarp**

*Geology/Seismology.* A roughly linear, cliff-like slope or face that breaks the continuity of a surface into distinct levels. Scarps are often produced by faulting, especially that which involves a significant amount of dip slip. See also *dip slip*.

**scatermia**

The type of toxemia wherein chemical toxins are absorbed through the intestines.

**scatter diagram**

A plot showing the locations of the individual data points within a coordinate system.

**scattered radiation**

Term used to describe radiation that, during its passage through a substance, has been deviated in direction. It may also have been modified by a decrease in energy.

**scattering**

The process by which small particles in the atmosphere deflect radiation from its path into different directions.

**scavenging**

Uncontrolled removal of solid waste materials.

**SCBA**

See *self-contained breathing apparatus*.

**SCE**

Sister chromatid exchange.

**scf**

Standard cubic foot (feet).

**scf/d**

Standard cubic feet per day.

**scfm**

Cubic feet of air per minute at standard conditions.

**schedule of compliance**

Under the Clean Air Act: A schedule of remedial measures, including an enforceable sequence of actions or operations, leading to compliance with an applicable implementation plan, emission standard, emission limitation, or emission prohibition.

**scheduled air transportation**

Establishments primarily engaged in furnishing air transportation over regular routes and on regular schedules. This industry includes Alaskan carriers operating over regular or irregular routes.

**scheduled aircraft miles completed**

The aircraft miles completed on scheduled flights, computed between only those scheduled points actually served.

**scheduled airlines, U.S.**

Carriers certificated by the federal government under Section 401 of the Federal Aviation Act permitting the operation of large aircraft with more than 60 seats.

**scheduled maintenance**

See *routine maintenance*.

**scheduled revenue service**

The total service scheduled to be provided for picking up and discharging passengers. Scheduled revenue service is computed from internal transit agency planning documents (e.g., run paddles, trip tickets, and public timetables), and includes the whole trip (e.g., deadhead, layover/recovery, and actual picking up and discharging of passengers). Schedule service excludes service interruptions and special additional services.

**scheduled service**

(1) Transport service operated pursuant to published flight schedules, including extra sections and related nonrevenue flights. (2) Transport service operated over an air carrier's routes, based on published flight schedules, including extra sections. (3) Transport service operated over routes pursuant to published flight schedules which are openly advertised with dates or times (or both) or otherwise

made readily available to the general public or pursuant to mail contracts with U.S. postal services. (4) A scheduled commercial passenger vehicle trip. The scheduled trip is generally offered at preestablished times between designated locations. (5) Total service scheduled computed from schedules. Scheduled service excludes service interruptions and special additional services.

**schistosomiasis**

A waterborne disease. Infection with flukes of the genus *Schistosoma*; called also *bilharzia* or *bilharziasis*. The disease is rare in North America, but is a significant health problem in many parts of the world, including the Near East, Africa, the Far East, South America, and the West Indies, and Puerto Rico. The various species cause different forms of the disease. Symptoms may include intestinal symptoms, hematuria, and other urinary symptoms. Treatment includes correction of anemia and other nutritional disorders caused by the parasites, and destruction of adult worms by administration of antimony and stibophen. Improvement in sanitation and snail control are the chief preventive measures.

**schizophrenia**

A chronic mental disorder characterized by inability to distinguish between fantasy and reality, and often accompanied by hallucinations and delusions.

**school and other nonrevenue buses**

Bus services for which passengers are not directly charged for transportation, either on a per passenger or per vehicle basis. See also *intercity bus*, *motor bus* and *transit bus*.

**school bus**

(1) A passenger motor vehicle which is designed or used to carry more than 10 passengers in addition to the driver, and which the Secretary [of Transportation] determines is likely to be significantly used for the purpose of transporting preprimary, primary, or secondary school students to such schools from home or from such schools to home. (2) Includes county school buses, private school buses, and buses chartered from private companies for the express purposes of carrying students to or from school and/or school-related activities.

**school bus hours**

The vehicle hours of travel by a revenue vehicle while serving as a school bus. School bus hours are only hours where a bus is primarily or solely dedicated to carrying school passengers.

**school bus operation**

The use of a school bus to transport only school children and/or school personnel from home to school and from school to home.

**school bus-related crash**

Any crash in which a vehicle, regardless of body design, used as a school bus is directly or indirectly involved, such as a crash involving school children alighting from a vehicle.

**school bus service**

The operation of buses exclusively to carry school passengers to and from their schools.

**school buses**

(1) Establishments primarily engaged in operating buses to transport pupils to and from school. School bus establishments operated by educational institutions should be treated as auxiliaries. (2) Type I and Type II school vehicles as defined in Highway Safety Program Standard No. 17, used exclusively to transport school students, personnel, and equipment.

**sciatic nerve**

A large spinal nerve innervating the thigh, lower leg, and foot.

**sciatica**

Neuralgia (pain) of the sciatic nerve. The term is popularly used to describe a number of disorders directly or indirectly affecting the sciatic nerve. Because of its length, the nerve is exposed to many different kinds of injury, and inflammation of the nerve or injury to it causes pain that travels down from the back or thigh along its course in the leg and into the foot and toes. Certain muscles of the legs may be partly or completely paralyzed by such a disorder. True sciatic neuritis is comparatively rare. It can be caused by certain toxic substances, such as lead and alcohol, and occasionally by various other factors.

**scieropia**

A defect of vision in which objects appear in a shadow.

**scintilla of evidence rule**

A spark of evidence. A metaphorical expression to describe a very insignificant or trifling item or particle of evidence.

**scintillation**

The apparent twinkling of a star due to its light passing through regions of differing air densities in the atmosphere.

**scintillation counter**

The combination of a phosphor (which converts ionizing particle energy into a light pulse), a photomultiplier (which converts the light pulse to many electric pulses), and associated circuitry for counting electric pulse. It is used primarily for the routine detection of radioactive material in various media.

**scintiscan**

A film or hardcopy output resulting from the scanning of intact internal tissues or organs for radioactive tracer.

**sclera**

The tough, white, outer coat of the eyeball.

**scleroderma**

An insidious chronic disorder characterized by progressive collagenous fibrosis of many organs and systems, usually beginning with the skin.

**s/cm<sup>3</sup>**

Structures per cubic centimeter of air.

**scoliosis**

Lateral curvature of the vertebral column. Scoliosis may begin during infancy, and the curvature usually occurs in the upper part of the infant's spine and grows progressively more marked.

**scope of employment**

The activities in which an employee engages in the carrying out of the employer's business which are reasonably foreseeable by the employer. Under the doctrine of *respondeat superior*, a principal is liable for the torts of his/her agent committed within the scope (actual or apparent) of his/her employment.

**score**

A quantitative indication of performance on some test or other measurement technique.

**SCOT**

See *Standard Colors of Textiles*.

**scotoma**

A totally or partially blind region in the visual field surrounded by a region of normal vision.

**scotopic adaptation**

See *dark adaptation*.

**scotopic spectral luminous efficiency ( $V'(\lambda), V_{\lambda}$ )**

A mathematical representation or curve describing the relative sensitivity of the eye to the wavelengths of light at low light levels.

**scotopic vision**

That vision which occurs in low light levels or after dark adaptation using the retinal rods. Also called *night vision* and *low light level vision*.

**SCP**

See *Standards Completion Project*.

**SCR**

See *skin conductance response*.

**scrap**

Materials discarded from manufacturing operations that may be suitable for reprocessing.

**scrappage rate**

As applied to motor vehicles, it is usually expressed as the percentage of vehicles of a certain type in a given age class that are retired from use (lacking registration) in a given year.

**scratch file**

*Computing.* A file that an application creates to store work in progress. It is maintained by the application, usually without the user's knowledge. The application typically deletes the scratch file at the end of the session.

**screen**

(1) The face of a visual display monitor. (2) To give one or more tests to an individual to determine whether he/she meets certain evaluation criteria. (3) A framework used as a shield or protector. (4) To examine.

**screen dump**

Direct the contents of the screen to a printer or file.

**screening**

Use of screens to remove coarse floating and suspended solids from sewage.

**screening concentration**

Media-specific benchmark concentration for a hazardous substance that is used in the Hazard

Ranking System for comparison with the concentration of that hazardous substance in a sample from that media. The screening concentration for a specific hazardous substance corresponds to its reference dose for inhalation exposures, as appropriate, and, if the substance is a human carcinogen with a weight-of-evidence classification of A, B, or C to that concentration that corresponds to its  $10^{-6}$  individual lifetime excess cancer risk for inhalation exposures or for oral exposures, as appropriate.

**scroll**

To advance vertically line-by-line or horizontally column-by-column under operator control to view text, alphanumeric information, or graphics on a screen. See also *vertical scroll* and *horizontal scroll*.

**scrotale**

The junction point of the posterior scrotum and the perineum.

**scrotale – cervical, rear, sitting**

The surface distance from the scrotale up the back to the cervicale. Measured with the individual sitting erect.

**scrotale – cervical, rear, standing**

The surface distance from the scrotale up the back to cervicale. Measured with the individual standing erect.

**scrotale – midshoulder, frontal, sitting**

The surface distance from scrotale up the front of the torso to midshoulder. Measured with the individual sitting erect.

**scrotale – midshoulder, frontal, standing**

The surface distance from scrotale up the front of the torso to midshoulder. Measured with the individual standing erect.

**scrotale – midshoulder over buttock, sitting**

The surface distance from scrotale over the buttock and up the back to midshoulder. Measured with the individual sitting erect.

**scrotale – midshoulder over buttock, standing**

The surface distance from scrotale over the buttock and up the back to midshoulder. Measured with the individual standing erect.

**scrotale – midshoulder, rear, sitting**

The surface distance from scrotale up the back to midshoulder. Measured with the individual sitting erect.

**scrotale – midshoulder, rear, standing**

The surface distance from scrotale up the back to midshoulder. Measured with the individual standing erect.

**scrotale – scye level, frontal, sitting**

The surface distance from scrotale up the front of the torso to the scye height. Measured with the individual sitting erect.

**scrotale – scye level, frontal, standing**

The surface distance from scrotale up the front of the torso to the scye height. Measured with the individual standing erect.

**scrotale – scye level, rear, sitting**

The surface distance from scrotale up the back to the scye height. Measured with the individual sitting erect.

**scrotale – scye level, rear, standing**

The surface distance from scrotale up the back to the scye height. Measured with the individual standing erect.

**scrotale – suprasternale, sitting**

The surface distance from scrotale up the front of the torso to suprasternale. Measured with the individual sitting erect.

**scrotale – suprasternale, standing**

The surface distance from scrotale up the front of the torso to suprasternale. Measured with the individual standing erect.

**scrotale – waist level, frontal, sitting**

The surface distance from scrotale up the front of the torso to the seated waist height. Measured with the individual sitting erect.

**scrotale – waist level, frontal, standing**

The surface distance from scrotale up the front of the torso to the standing waist height. Measured with the individual standing erect.

**scrotale – waist level over buttock, sitting**

The surface distance from scrotale over the buttock and up the back to the sitting waist height. Measured with the individual sitting erect.

**scrotale – waist level over buttock, standing**

The surface distance from scrotale over the buttock and up the back to the standing waist height. Measured with the individual standing erect.

**scrotale – waist level, rear, sitting**

The surface distance from scrotale up the back in the midsagittal plane to the seated waist

height. Measured with the individual sitting erect.

**scrotale – waist level, rear, standing**

The surface distance from scrotale up the back to the standing waist height. Measured with the individual standing erect.

**scrotum**

The pouch in the male genitalia containing the testes and other tissues.

**scrubber**

An air pollution reduction device that uses a spray of water or reactant, or a dry process, to trap pollutants in emissions.

**SCUBA**

Self-contained underwater breathing apparatus. The SCUBA ensemble provides users with a continuous supply of breathing air for a limited period of time (e.g., 30 minutes) while the user performs activities underwater. Use may be for recreational purposes as well as for certain occupations that require underwater work. *See also [self-contained breathing apparatus](#).*



*SCUBA equipment provides uninterrupted breathing air for a limited time so the user can operate unencumbered underwater*

**scurvy**

A disease caused by a lack of ascorbic acid (Vitamin C) in the diet. It is characterized by the presence of anemia, edema, ulceration of gums, and hemorrhages into the skin and from the mucous membranes. Symptoms include poor appetite, digestive disturbances, failure to gain weight, and increasing irritability. Black and blue spots are scattered over the skin. Severe deficiency of vitamin C may cause changes in bone structure. In the United States, adult scurvy is rare. It may af-



fect the elderly who live alone and neglect their diet.

**scye**

(1) The lower level of the axilla, represented by the highest point of the axillary fold. (2) The armhole of a garment.

**scye circumference**

The surface distance around the shoulder over acromion and through the scye. Measured with the individual standing or sitting erect and the arms hanging naturally at the sides.

**SDO**

See *Standard Deviate Observer*.

**SEA**

See *selective enforcement auditing*.

**sea breeze**

A coastal local wind that blows from the ocean onto the land. The leading edge of the breeze is termed a *sea breeze front*. It is most common at night as a result of the water being warmer than the surrounding land. It is a local wind caused by uneven heating of land and ocean surfaces.

**sea breeze convergence zone**

A region where sea breezes, having started in different regions, flow together and converge.

**sea-land barge**

Barge designed as a container that can be moved directly from the inland waterway to a truck or train and then moved to a destination.

**sea level engine**

*Aviation*. A reciprocating aircraft engine having a rated takeoff power that is producible only at sea level.

**sea level pressure**

The atmospheric pressure at mean sea level.

**seabee system**

Designed by Lykes Bros. Steamship Co., the system requires a SEABEE lighter or barge and a SEABEE carrier vessel or mother ship. The barges are 97.5 feet long and 35 feet wide and have a hatch opening of 85 by 35 feet. The barges are moved down the inland waterway to the mother ship and brought on board by a 2,000-ton immersible elevator which is an integral part of the mother ship. Wheel dollies then transport the barges from the elevator to the point of rest on the ship.

**seabee vessels**

(1) Ocean vessels constructed with heavy-duty submersible hydraulic lift or elevator system at the stern of the vessel. The sea-bee system facilitates forward transfer and positioning of barges. (2) A type of barge carrying ship, similar to the LASH vessel except it employs a heavy-lift elevator at the stern-end of the ship to lift barges on and off.

**sealable equipment**

Equipment enclosed in a case or cabinet that is provided with a means of sealing or locking so that live parts cannot be made accessible without opening the enclosure. The equipment may or may not be operable without opening the enclosure.

**sealed source**

A radioactive substance sealed in an impervious containment, such as a metal capsule, and which has sufficient mechanical strength to prevent direct contact with the radiation source, or release of the radioactive substance from the containment, under normal conditions of use and wear. The NRC defines a sealed source as any byproduct material that is encased in a capsule designed to prevent leakage or escape of the byproduct material.

**seaplane base**

Facility used primarily by seaplanes.

**seaplane landingtakeoff**

Water area used for seaplanes landing and takeoff.

**search**

The effort expended to locate a distressed unit by a reporting unit in terms of time and distance.

**search and rescue (SAR)**

A service which seeks missing aircraft and assists those found to be in need of assistance. It is a cooperative effort using the facilities and services of available federal, state, and local agencies. See also *SAR facility*.

**search and seizure**

The area of law dealing with authority of government to enter private property or search natural persons for evidence or otherwise gather information that is private.

**search warrant**

An order in writing, issued by a justice or other magistrate, in the name of the state, directed to a sheriff, constable, or other officer,



authorizing him/her to search for and seize any property that constitutes evidence of the commission of a crime, contraband, the fruits of crime, or things otherwise criminally possessed; or, property designed or intended for use or which is or has been used as the means of committing a crime.

**seashore**

That portion of land adjacent to the sea which is alternately covered and left dry by the ordinary flux and reflux of the tides.

**seasickness**

Discomfort caused by the motion of a boat under way, a form of motion sickness. The unusual motion disturbs the organs of balance located in the inner ear. The symptoms are nausea and vomiting, dizziness, headache, pallor, and cold perspiration.

**seasonal affective disorder (SAD)**

A disorder in which an individual suffers symptoms such as depression, lethargy, sleep disturbances, and weight gain during the winter months when daytime hours are reduced.

**seasonal employment**

As used in compensation laws, as a basis for determining the right to an amount of compensation, refers to occupations which can be carried on only at certain seasons or fairly definite portions of the year, and does not include such occupations as may be carried on throughout the entire year.

**seat**

Any structure for assuming a sitting or reclining posture which consists of a seatpan and a seatback which has a seatback angle of approximately 90° or more and is elevated off the floor or local other reference surface.

**seat angle**

The angle of the seatpan plane above a horizontal reference with the origin at the seat reference point.

**seat belt**

A strap or similar restraint about waist level for restraining a person at or below the waist in a seat. Also called *lap belt*.

**seat depth**

The linear distance in the plane of a seatpan from its intersection with the seatback plane

to the front-most edge of the seatpan of a chair.

**seat-miles**

The aircraft miles flown in each inter-airport hop multiplied by the number of seats available on that hop for revenue passenger use.

**seat offered kilometer**

Unit of measure representing the movement over one kilometer or one seat available in an inland waterways transport (IWT) passenger vessel when performing the services for which it is primarily intended over one kilometer.

**seat reference point (SRP)**

The midpoint of the line formed by the intersection of the seatpan and the seatback.

**seatback**

The back of a seat structure, for accommodating the human back.

**seatback angle**

The angle between the seatpan and the seatback. Also referred to as backrest-to-seat angle.

**seatback plane**

That geometrical plane established by the seatback.

**seating capacity**

The number of seats that is actually installed in the vehicle.

**seating position**

The location of the occupants in the vehicle. More than one can be assigned the same seat position; however, this is allowed only when a person is sitting on someone's lap.

**seating reference point (SGRP)**

The unique design H-point, as defined in Society of Automotive Engineers (SAE) J1100 (June 1984), which: a) establishes the rear-most normal design driving or riding position of each designated seating position, which includes consideration of all modes of adjustment, horizontal, vertical, and tilt in a vehicle; b) has X, Y, and Z coordinates, as defined in SAE J1100 (June 1984), established relative to the designed vehicle structure; c) simulates the position of the pivot center of the human torso and thigh; and d) is the reference point employed to position the two-dimensional drafting template with the 95th percentile leg

described in SAE J826 (May 1987), or, if the drafting template with the 95th percentile leg cannot be positioned in the seating position, is located with the seat in its most rearward adjustment position.

**seatpan**

That portion of a seat on which the buttocks and thighs rest when sitting.

**seaworthy**

The ability to withstand ordinary stress of wind, waves, and other weather which the vessel might normally be expected to encounter. A seaworthy vessel must, in general, be sufficiently strong and staunch, and equipped with appropriate appurtenances to allow it to safely engage in trade for which it was intended.

**sebaceous**

(1) Pertaining to sebum or suet. (2) Secreting a greasy lubricating substance.

**sebaceous cyst**

A benign retention cyst of a sebaceous gland containing the fatty secretion of the gland.

**sebaceous glands**

Glands which secrete sebum, a greasy lubricating substance.

**seborrhea**

An oily skin condition caused by an excess output of sebum from the sebaceous glands of the skin.

**seborrheic dermatitis**

See *dandruff*.

**sebum**

The oily secretion of the sebaceous glands, whose ducts open into the hair follicles. It is composed of fat and epithelial debris from the cells of the malpighian layer, and it lubricates the skin. See also *sebaceous*, *sebaceous cyst*, and *sebaceous gland*.

**sec**

Second.

**SECALS**

See *Separate Engineering Control Airborne Limits*.

**second**

(1) *General*. A unit of time equal to 1/60 of a minute. (2) *Radiation*. The time required for 9,192,631,770 radiation periods corresponding to the cesium-133 atom transition between

the two ground-state hyperfine levels. (2) *Quality*. An item not up to all specifications, but which may satisfy most uses.

**Second Amendment**

The Second Amendment to the U.S. Constitution provides that a well-regulated militia, being necessary to the security of a free state, the right of the people to keep and bear arms shall not be infringed. State and federal laws, however, regulate the sale, transportation, and possession of firearms.

**second-class lever**

A lever system in which the fulcrum is at or near one end, the effort near the other end, and the resistance is located between them.

**second degree murder**

The unlawful taking of human life with malice, but without the other aggravating elements of first degree murder (i.e., without deliberation or premeditation).

**second-hand evidence**

Evidence which has passed through one or more media before reaching the witness (e.g., hearsay evidence).

**second in command**

A pilot who is designated to be second in command of an aircraft during flight time.

**second shift**

A late afternoon-evening work shift of approximately 8 hours duration, typically extending between the hours of 3:00 pm and 1:00 am. Also referred to as *B shift* and *evening shift*.

**secondary airport**

An airport receiving approach control service as a satellite to a primary approach control facility, or one at which control is exercised by the approach control facility under tower en route control procedure.

**secondary calibration method**

Methods which employ a device that must be calibrated against a primary standard method and are not as accurate as the primary method. A wet-test meter, dry-gas meter, and a rotometer are examples of secondary standard methods that must be calibrated against a primary standard. See also *secondary standard (2)*.

**secondary combustion air**

The air which is introduced above or below a fuel by natural, induced, or forced draft.

**secondary drinking water regulations**

Unenforceable regulations which apply to public water systems and which specify the maximum contamination levels which, in the judgment of EPA, are required to protect the public welfare. These regulations apply to any contaminants that may adversely affect the odor or appearance of such water and consequently may cause people served by the system to discontinue its use.

**secondary event**

See *contributory event*.

**secondary evidence**

That which is inferior to the primary or best evidence.

**secondary motor vehicle controls**

Those controls not critical to moving or stopping a motor vehicle (e.g., radio, turn signals, lighting).

**secondary pollutant**

A pollutant formed in the atmosphere by chemical changes taking place between primary pollutants and other substances present in the air.

**secondary positioning movement**

That part of a positioning movement which brings the body member into an exact relationship with the point of aim. Also called *corrective positioning movement* and *fine adjustment*.

**secondary radiation**

That which originates as the result of absorption of other radioactivity in matter. It may be either electromagnetic or particulate in nature.

**secondary radon measurement services**

Radon measurement services that do not include the reading or the ability to analyze the results of the measurement devices used. These services may include placement and retrieval of devices, reporting results, and/or consultation with consumers.

**secondary separation assurance**

A backup to the primary means for maintaining aircraft separation.

**secondary standard**

(1) *General*. Any standard prepared by direct comparison to a primary standard. (2) *Envir-*

*ronmental*. Pertaining to airborne pollutants: The EPA's standards designed to protect against environmental damage, such as damage to soils, crops, wildlife, weather, climate, and personal comfort. It establishes an ambient concentration of a pollutant with a margin of safety that will protect the environment from adverse effect. (3) *Instrumentation*. Air flow measuring device that traces its calibration to a primary standard and which must be periodically recalibrated. See also *secondary calibration method*.

**secondary task**

A task which must be performed in addition to an individual's primary task.

**secondary treatment**

The second step in most publicly owned waste treatment systems in which bacteria consume the organic parts of the waste. It is accomplished by bringing together waste, bacteria, and oxygen in trickling filters or in the activated sludge process. This treatment removes floating and settling solids and about 90 percent of the oxygen demanding substances and suspended solids. Disinfection is the final stage of secondary treatment. See primary, tertiary treatment.

**secondary tympanic membrane**

That membrane which covers the round window of the cochlea. See also *round window membrane*.

**secondary viewing area**

That portion of a computer display, screen, or window which contains information such as system function status or messages.

**secondary work**

Any activity which is not directly related to on-the-job productivity, but which must be performed by direct labor personnel to support the primary job.

**secretion**

(1) The process of elaborating a specific product as a result of the activity of a gland. This activity may range from separating a specific substance of the blood to the elaboration of a new chemical substance. (2) Any substance produced by secretion. One example is the fatty substance produced by the sebaceous glands to lubricate the skin. Saliva, produced by the salivary glands, and gastric juice, secreted by specialized glands of the

stomach, are both used in digestion. The secretions of the endocrine glands include various hormones and are important in the overall regulation of body processes.

#### **Section 6(a) standards**

Also known as *1917 Base Standards*. These are the standards that OSHA adopted within the first two years after the passing of the OSHAct and are, essentially, those national consensus standards related to occupational safety and health that existed at that time. See also *consensus standard*.

#### **Section 6(b) standards**

Those standards promulgated by OSHA under the normal rulemaking procedures of the agency.

#### **Section 6(c) standards**

Also known as *emergency temporary standards (ETS)*. This section of the OSHAct authorizes the adoption of a standard without using the notice and comment rulemaking procedures. The authority to issue an ETS can be exercised any time OSHA determines that employees are being subjected to extreme danger from exposure to substances or agents known to be toxic or physically harmful, and that an emergency standard is necessary to protect employees from that danger.

#### **Section 15**

See *National Transit Database*.

#### **section modulus**

*Automotive Design*. A measure of the strength of frame side rails, determined by the cross-section area and shape of the side rails. Section modulus is not affected by the material from which the side rail is made, only by the shape and position of the rail.

#### **section of land**

A division or parcel of land, on the government survey, comprising one square mile or 640 acres. Each "township" (six miles square) is divided by straight lines into thirty-six sections, and these are again divided into half-sections and quarter-sections.

#### **sectional aeronautical charts**

Designed for visual navigation of slow or medium speed aircraft. Topographic information on these charts features the portrayal of relief and a judicious selection of visual check points for Visual Flight Rules (VFR) flight.

Aeronautical information includes visual and radio aids to navigation, airports, controlled airspace, restricted areas, obstructions, and related data.

#### **sectional ladder**

A non-self-supporting portable ladder, non-adjustable in length, consisting of two or more sections of ladder so constructed that the sections may be combined to function as a single ladder. Its size is designated by the overall length of the assembled sections.

#### **sectionalizing switch**

A switch for disconnecting a section of a power line from the source of energy.

#### **sector suite (S/S)**

*Aviation*. Refers to the composition of functions which directly comprise either the controller or sector suite console/support processing elements.

#### **sector suite workstation**

*Aviation*. A group of consoles containing displays and input devices whereby air traffic control (ATC) specialists, controllers or supervisors interface with the ACF.

#### **secular equilibrium**

*Ionizing radiation*. The condition that exists when the ratio of parent nuclei to daughter nuclei remains constant with time. Thus, both parent and daughter decay at the same rate (i.e., that of the parent).

#### **secular trend**

A change in some parameter of a population that occurs gradually over long periods of time.

#### **secure chemical**

See *landfills (2)*.

#### **secure maximum contaminant level**

Maximum permissible level of a contaminant in water which is delivered to the free flowing outlet of the ultimate user of a water supply, the consumer, or of contamination resulting from corrosion of piping and plumbing caused by water quality.

#### **sedative**

(1) Allaying activity and excitement. (2) An agent that calms nervousness, irritability, and excitement. In general, sedatives depress the central nervous system and tend to cause lassitude and reduced mental activity.

**sedentary occupation**

An occupation involving a great deal of sitting and/or having a gross metabolic cost of not more than 64 calories per square meter of body surface per hour.



*The most commonly encountered sedentary occupation in today's workplace is computer operator*

**sedentary work**

That work which is normally accomplished in a sitting posture.

**Sedgwick rafter cell**

A glass slide/cell, formerly used to contain an aliquot of the collection media in which airborne particulate was collected. The cell was used to count the particulates microscopically so that a determination of dust concentration could be made.

**sedimentation**

(1) The process of letting solids settle out of wastewater by gravity during wastewater treatment. (2) The process by which solids settle out of a fluid (e.g., air, water).

**sedimentation tanks**

Holding areas for wastewater where floating wastes are skimmed off and settled solids are removed for disposal.

**sediments**

Soil, sand, and minerals washed from the land into water usually after a rain. They pile up in reservoirs, rivers and harbors, destroying fish-nesting areas and holes used by water animals, and clouding the water so that needed sunlight might not reach aquatic plants. Careless farming, mining, and building activities will expose sediment materials, allowing them to be washed off the land after rainfalls.

**seed**

An inclusion impurity which resembles a tiny embedded pebble in glass.

**segmentation method**

A technique for finding the center of gravity of the body by subdividing the body into segments/links and using their weight, lengths, and relative locations in space.

**seismic belt**

See *seismic zone*.

**seismic creep**

See *creep*.

**seismic gap**

A segment of an active fault zone that has not experienced a major earthquake during a time interval when most other segments of the zone have. Seismologists commonly consider seismic gaps to have a high future-earthquake potential.

**seismic moment**

A measure of the strength of an earthquake, equal to the product of the force and the moment arm of the double-couple system of forces that produces ground displacements equivalent to that produced by the actual earthquake slip. It is also equal to the product of the rigidity modulus of earth material, the fault surface area, and the average slip along the fault. Therefore, both seismological and geological observations can produce the same result.

**seismic zone**

A region of the Earth's crust, generally linear, associated with active seismicity. It may not necessarily be connected with a particular fault or surface fault trace. Also called *seismic belt*.

**select**

To choose from a set of possible options.

**selected time**

That time value chosen as representative or expected for a set of work elements. Also called *selected element time*.

**selective absorbers**

Substances such as water vapor, carbon dioxide, clouds, and snow that absorb radiation only at particular wavelengths.

**selective attention**

The ability to consciously or willfully focus on a restricted set of desired inputs, to the ex-

clusion of the remaining concurrently impinging sets. Also referred to as *focused attention*.

**selective enforcement auditing (SEA)**

Procedures and testing requirements to be met under EPA regulations.

**selective localization**

As applies to radioisotopes, the accumulation of a particular isotope to a significantly greater degree in certain cells or tissues.

**selective pesticide**

A chemical designed to affect only certain types of pests, leaving other plants and animals unharmed.

**selective transmittance**

The transmission of certain wavelengths of electromagnetic energy through a transparent or translucent medium.

**Self-accelerating decomposition temperature (SADT)**

The temperature at which a material (particularly organic peroxides) begins to become chemically active, generally releasing the energy of reaction in the form of heat, often producing enough heat to ignite combustible components of nearby materials, as direct result of this thermochemical reaction. Some of these reactions may be instantaneous and extremely violent.

**self-contained atmospheric protective ensemble (SCAPE)**

A protective suit providing fully encapsulated protection to the wearer against exposure to toxic and/or corrosive chemical substances. The suit protects against the common routes of exposure (e.g., inhalation, ingestion, absorption). Depending upon the configuration of the suit, the user can either wear a SCBA for breathing air, or the suit can be fitted with a supplied-air-hose line. While the latter offers greatly extended working time over the SCBA configuration, the user must sacrifice range of working area since movement will be restricted to the length of the breathing air line. This apparatus is most commonly used in the aerospace industry during space launch vehicle processing.

**self-contained breathing apparatus (SCBA)**

A device, worn by an individual, that provides a containerized source of high-pressure

breathing air to a pressurized mask through a regulator. Normally used in atmospheres containing extremely high levels of air contaminants, unknown concentrations of hazardous substances, or, in some instances, in oxygen deficient atmospheres. A *self-contained underwater breathing apparatus (SCUBA)* is used by divers for working or participating in recreational activities underwater.

**self-contained ensemble**

A fully protective suit, completely self-contained with its own breathing air supply (either air hose or portable tank) that provides whole-body protection for the wearer during hazardous materials spill cleanup operations or other situations that require such protection.



*Self-contained ensemble provides whole body protection and breathing air for the user*

**self-contained eyewash**

An eyewash that is not permanently installed and must be refilled or replaced after use.

**self-contained respirator**

A respiratory protective device that is designed to provide breathing air to the wearer, independent of the surrounding atmosphere.



They are of three types: open-circuit systems, closed-circuit systems with oxygen self-generating capability, and compressed air or oxygen closed-circuit devices. They are also classified as demand and pressure-demand units.

**self-critical privilege**

See *self-evaluative privilege*.

**self-defense**

The protection of one's person or property against some injury attempted by another. The right of such protection. An excuse for the use of force in resisting an attack on the person.

**self-evaluative privilege**

A privilege recognized by a few courts which protects evaluative portions of an organization's investigations and resulting recommendations. The protected material must be subjective and evaluative, not factual information, and prepared with the expectation that such material would be kept confidential and have, in fact, been kept confidential. The privilege is available regardless of whether the investigation was prepared in anticipation of litigation. Also known as *self-critical privilege*.

**self-incrimination**

Acts or declarations, either as testimony at trial or prior to trial, by which one implicates himself/herself in a crime. The Fifth Amendment of the U.S. Constitution, as well as provisions in many state constitutions and laws, prohibits the government from requiring a person to be a witness against himself/herself involuntarily or to furnish evidence against himself/herself. It is the burden of the government to accuse and to carry the burden of proof of guilt. The defendant cannot be compelled to aid the government in this regard.

**self-insurance**

Plan in which the insured (e.g., a business) places aside in a fund sufficient sums to cover liability losses that may be sustained. Commonly, under such a plan the business will self-insure up to a certain amount and then carry regular liability insurance to cover any excesses.

**self-paced job**

A job which is under complete control of the worker.

**self-paced work**

That work which is performed manually by a worker using simple tools or machines which are controlled by him/her such that the output rate/performance level is solely determined by the worker. Also referred to as *internally paced work*, *man-paced work*, *effort-controlled cycle*, and *unrestricted work*. Opposite of *external pacing*.

**self-pacing**

Pertaining to self-paced work.

**self-propelled barge**

A freight vessel having its own means of mechanical propulsion.

**self-propelled pusher barge**

Self-propelled barge designed or fitted to push towed barges.

**self-propelled pusher tanker barge**

Self-propelled pusher barge for the bulk transport of liquids or gases.

**self-propelled river-sea navigation vessel**

Inland waterways transport (IWT) freight vessel having a carrying capacity of at least 20 tons also designed for the transport of goods by sea and equipped with their own means of propulsion developing at least 37 kilowatts (kW).

**self-propelled tanker barge**

A self-propelled barge intended for the bulk transport of liquids or gases.

**self-protective**

The capacity of a robotic or telerobotic system to protect itself from damage caused by its own activities.

**self-reporting system**

A mechanism or set of procedures in an organization that assures that problems and violations of laws or corporate policy are promptly and decisively addressed and corrected. Reporting of suspected wrongdoing may be external, such as reporting to regulatory authorities, or internal, such as reporting to upper-level management. Willingness of an organization to deal promptly and decisively with an employee or agent who has committed a crime while in the service of the organi-

zation is a mitigating factor of the Federal Sentencing Guidelines (FSGs).

**sellion**

The point of greatest surface indentation at the base of the nose between the eyes.

**sellion height**

The vertical distance from the floor to sellion. Measured with the individual standing erect, looking straight ahead, and the scalp and facial muscles relaxed. Also called *nasal root height*.

**sellion to back of head**

The horizontal linear distance from inion to sellion.

**sellion to top of head**

The vertical distance from sellion to the vertex level. Measured with the individual standing erect.

**sellion to wall**

The horizontal linear distance from a wall to sellion. Measured with the individual standing or sitting erect with his/her head against the wall and scalp muscles relaxed.

**Selspot**

An active motion tracking system which uses flashing infrared LEDs and optoelectronic sensors.

**SEM**

See *scanning electron microscope*. See also *standard error of the mean*.

**semaphore**

An apparatus for making signals, as with movable arms, disks, flags, or lanterns. Common to rail operations but may also be encountered in other modes of transportation such as marine.

**semaphore arm**

The part of a semaphore signal displaying an aspect. It consists of a blade fastened to a spectacle.

**semaphore arm spectacle**

That part of a semaphore arm which holds the roundels and to which the blade is fastened.

**semaphore blade**

The extended part of a semaphore arm which shows the position of the arm.

**semi**

(1) *General*. Prefix meaning not complete, usually referring to half of a whole entity. (2) *Transit (slang)*. Semitrailer, used loosely in reference to a tractor and semitrailer unit. See also *semitrailer, tractor-semitrailer and truck*.

**semicircular canals**

(1) Special organs within the labyrinth of the inner ear that serve to maintain the sense of balance and orientation. (2) Any of three bony tubular structures making up part of the inner ear which are filled with perilymph and oriented at approximately right angles to each other.

**semicircular duct**

Any of three tubular structures lying within the semicircular canals which are filled with endolymph and form part of the membranous labyrinth of the inner ear.

**semiconductive hose**

A hose with an electrical resistance high enough to limit the flow of stray electric currents to safe levels, yet not so high as to prevent drainage to ground; a hose of not more than 2 megohms resistance over its entire length and not less than 5,000 ohms per foot meets the requirement.

**semiconductor**

Any of various solid crystalline substances, such as silicon, having electrical conductivity greater than insulators but less than metals.

**semiconductor sensor**

A sensor that responds to a contaminant that is present in the air as a result of its being adsorbed on the surface of the semiconductor type sensor and producing a change in its conductivity in proportion to the concentration of the contaminant present in the sampled air.

**semiconfined aquifer**

An aquifer that is partially confined by a soil layer (or layers) of low permeability through which recharge and discharge can occur.

**semi-interquartile range (Q)**

That range represented by one-half the range from the first quartile to the third quartile.

$$Q = \frac{Q^3 - Q^1}{2}$$

**semimental basic element**

Any of a set of work elements which involves a mental activity component as well as a physical component.

**semipermeable membrane**

A barrier which permits the passage of some materials in a mixture but not all.

**semitrailer**

(1) Any motor vehicle, other than a pole trailer, which is designed to be drawn by another motor vehicle and so constructed so that some part of its weight rests upon or is carried by the self-propelled towing vehicle. (2) Truck trailer equipped with one or more axles and constructed so that the front end rests upon a truck tractor.

**senescence**

Term for the aging process. Sometimes used to describe lakes or other bodies of water in advanced stages of eutrophication.

**sensation**

The detection of some stimulus by one or more sensory receptors.

**sense**

Any system through which information is acquired about the environment, normally referring to human or robotic abilities.

**sense of slip**

*Seismology.* The sense with which one side of a fault slips relative to the other side, in a reference frame defined by a horizontal (level) plane oriented with the pull of Earth's gravity pointed "down" (perpendicular to the planet).

**sensible**

Capable of being perceived by one of the sense organs.

**sensible heat**

That heat which, when added or removed, results in a change of temperature.

**sensible temperature**

The sensation of temperature that the human body feels in contrast to the actual temperature of the environment as measured with a thermometer.

**sensing time**

The temporal interval required for a human operator or other controller to become aware of a signal.

**sensitivity**

(1) *General.* The ability to detect a specific condition/stimulus, or distinguish differences between conditions/stimuli. (2) *Instrumentation.* The minimum amount of contaminant that can be repeatedly detected by the device and the minimum input signal strength required to produce a desired value of output signal.

**sensitivity analysis**

(1) A systematic study of those changes in results or output when one or more inputs are changed. (2) Under ISO 14000, systematic procedure for estimating the effects on the outcome of a study of the chosen methods and data and uncertainty therein.

**sensitivity training**

That training to improve an individual's appreciation for and consideration of his/her environment, especially with regard to the people in it and their feelings.

**sensitization**

An allergic-like reaction. A process occurring in some individuals, over a non-specific time period, in which the induction of acquired sensitivity or of allergic symptoms is manifested without any associated infection or disease. Sensitization can occur with chemicals, drugs, or other substances of exposure. Once sensitization has occurred, the individual will display allergic reactions whenever in contact with the substance.

**sensitize**

Promote a greater response to succeeding stimuli than was exhibited by the original stimulus.

**sensitizer**

A foreign agent or substance that is capable of causing a state of abnormal responsiveness in an individual. Following repeated or extended exposure to a substance, some people develop an allergic type of skin irritation referred to as sensitization dermatitis, while others may have a more serious response.

**sensor**

That part of a transducer, including a human sensory receptor, which responds to incoming excitation.

**sensorimotor**

Pertaining to both sensory and motor capabilities, activities, or other interactions.

**sensorimotor integration**

That central nervous system processing of sensory information and the resulting direction to motor regions which culminate in a motor response for the given input.

**sensorineural hearing loss**

Usually an irreversible hearing loss involving the auditory nerve and the loss of hair cells in the organ of Corti in the ear, caused by exposure to excessive noise levels, viruses, congenital defects, or drug toxicity.

**sensory adaptation**

An adjustment in the sensitivity of a sensory structure to compensate for the intensity or quality of a stimulus and attempt to maintain sensory effectiveness.

**sensory deprivation**

The reduction in intensity or elimination of stimuli which an organism would normally receive, usually from the external environment.

**sensory disability**

Any disability involving the visual, auditory, olfactory, tactile, gustatory, proprioceptive, kinesthetic, or other bodily receptor apparatus.

**sensory feedback**

Any information received by a sensory system which may be used to indicate the quality of performance of a voluntary act and enable adjustments if desired or necessary.

**sensory homunculus**

A representation of the human body on the surface of the cerebral somatosensory cortex whose distribution is proportional to the density of innervation in various parts of the body.

**sensory load**

A measure of the number, rate, and variety of stimuli which must be perceived.

**sensory memory**

A brief form of memory resulting directly from sensory input, and typically having a duration of a few seconds but which depends on the modality.

**sensory nerve**

*See afferent nerve.*

**sensory overload**

A condition in which the sensory load is too great for a human to process it effectively. *See also load stress and speed stress.*

**sensory receptor**

Any neuron or specialized portion of a neuron which is capable of detecting some particular aspect of the environment.

**sentence**

*Law.* The judgement formally pronounced by the court or judge upon the defendant after his/her conviction in a criminal prosecution, imposing the punishment to be inflicted, usually in the form of a fine, incarceration, or probation.

**Separate Engineering Control Airborne Limits (SECALS)**

Separate exposure limits set by OSHA for industries where it is not feasible to achieve the permissible exposure limit (PEL) through engineering controls and work practices alone. Engineering and work practice controls must be used to reach the specified limit and then the employer must provide respiratory protection to achieve the TWA-PELs.

**separately derived system**

A premise's wiring system whose power is derived from generator, transformer, or converter winding and has no direct electrical connection, including a solidly connected grounded circuit conductor, to supply conductors originating in another system.

**separation of jury**

After a case has been given to the jury for deliberation, they are not permitted to separate until a verdict is reached except under the control of the court through officers and sheriffs. In civil cases in some jurisdictions this rule is relaxed, generally with admonition from the judge not to discuss the case with anybody. *See also sequester.*

**separation of powers**

The area of law dealing with the distinctions and relationships between the three levels of government in the United States: the Executive, Legislative, and Judicial Branches.

**separation of witnesses**

An order of the court requiring all witnesses, except the plaintiff and defendant, to remain outside the courtroom until each is called to testify.

**sepsis**

The presence of pathogenic microorganisms or their toxins in the blood or other tissue.

**septic**

Material that can cause sepsis, which is the presence of pathogenic organisms, or their toxins in the blood or tissues.

**septic tank**

An underground storage tank for wastes from homes having no sewer line to a treatment plant. The waste goes directly from the home to the tank, where the organic waste is decomposed by bacteria and the sludge settles to the bottom. The effluent flows out of the tank into the ground through drains; the sludge is pumped out periodically.

**septicemia**

Blood poisoning, with actual growth of infectious organisms in the blood.

**septum**

A dividing wall between two bodily cavities. Some septa are membranous, some are composed of bone and some of cartilage, and each is named according to its location. The wall separating the atria (upper chambers) of the heart, for instance, is called the septum atriorum, or interatrial septum. Usually, however, the term septum is used to refer to the nasal septum, a plate of bone and cartilage covered with mucous membrane that divides the nasal cavity.

**sequela**

Condition, lesion, or any affection following or resulting from a disease. A pathological condition resulting from a disease.

**sequence of use principle**

A concept in equipment design that controls and displays should be placed such that their physical locations correspond with the order in which they are used.

**sequencing**

The process of specifying or performing a series of tasks in a certain order.

**sequester**

To separate or isolate (e.g., to sequester jurors is to isolate them from contact with the public during the course of a sensational trial).

**SERC**

See *State Emergency Response Commission*.

**SERDS**

See *Standard Ergonomic Reference Data System*.

**serial behavior**

An integrated sequence of acts, usually leading to some goal or conclusion.

**serial connector**

Used to connect a variety of external optional devices (e.g., scanners, keyboards, printers, etc.). Also used to transfer data between computers.

**serious**

Important; weighty; momentous, grave, great.

**serious and willful misconduct**

In workers' compensation law, the intentional doing of something with the knowledge that it is likely to result in a serious injury, or with a wanton and reckless disregard of its probable consequences.

**serious bodily injury**

(1) *OSHA*. According to OSHA, an injury that involves a substantial risk of death, protracted unconsciousness, protracted and obvious physical disfigurement, or protracted loss or impairment of the function of a bodily member, organ, or mental faculty. See also *serious harm*. (2) *Law*. For the purpose of first-degree assault prosecution, serious bodily injury is defined as any bodily injury which involves a substantial risk of death.

**serious crime**

For the purpose of determining the right to a jury trial, crimes carrying more than six-month sentences are considered "serious crimes" and those carrying less are "petty crimes."

**serious harm**

As defined by the OSHA Field Operations Manual (FOM), either the permanent or temporary impairment of the body in which part of the body is rendered functionally useless or is substantially reduced in efficiency, or illness that could shorten life or significantly reduce physical or mental efficiency. See also *serious bodily injury*.

**serious hazard**

According to OSHA, any condition or practice which could be classified as a serious violation of applicable federal or state statutes, regulations or standards, based on criteria contained in the current Field Operations Manual or an approved state counterpart, ex-

cept that the element of employer knowledge shall not be considered.

**serious illness**

An illness that permanently or materially impairs, or is likely to permanently or materially impair, the health of a person. Not every illness is serious.

**serious injury**

(1) *Federal Railroad Administration*. An injury that results in the amputation of any appendage, the loss of sight in an eye, the fracture of a bone, or the confinement in a hospital for a period of more than 24 consecutive hours. (2) *Federal Aviation Administration and National Transportation Safety Board*. Any injury which a) requires hospitalization for more than 48 hours, commencing within 7 days from the date the injury was received; b) results in a fracture of any bone except simple fractures of fingers, toes, or nose; c) involves lacerations which cause severe hemorrhages, nerve, muscle, or tendon damage; d) involves injury to any internal organ; e) involves second- or third-degree burns, or any burns affecting more than 5 percent of the body surface.

**serious mishap**

An event or incident that has the potential of resulting in injury to personnel and/or damage to high value property, or that might require the use of contingency or emergency procedures.

**serious traffic violation**

Conviction, when operating a commercial motor vehicle, of: a) excessive speeding, involving any single offense for any speed of 15 miles per hour or more above the posted speed limit; b) reckless driving, as defined by state or local law or regulation, including but not limited to offenses of driving a commercial motor vehicle in willful or wanton disregard for the safety of persons or property; c) improper or erratic traffic lane changes; d) following the vehicle ahead too closely; or e) a violation, arising in connection with a fatal accident, of state or local law relating to motor vehicle traffic control other than a parking violation. (Serious traffic violations exclude vehicle weight and defect violations.)

**serious violation**

As defined in the OSHAct, exists when there is a substantial probability that death or seri-

ous physical harm could result from a condition which exists, or, from one or more practices, means, methods, operations, or processes which have been adopted or are in use.

**serious violation citation**

Under Federal OSHA, a citation that is issued when there is a substantial probability that death or serious physical harm could result from a condition that exists and the employer knows or, with the exercise of reasonable diligence, could have known of the presence of the violation.

**serology**

The branch of medicine concerned with the analysis of blood serum.

**serpentine**

One of the two major groups of minerals from which the asbestiform minerals are derived.

**serum**

That fluid remaining when the cells and fibrinogen are removed from blood plasma. Blood serum, a clear, straw-colored liquid, from persons or animals whose bodies have built up antibodies is called antiserum or immune serum. Inoculations with such an antiserum provide temporary, or passive, immunity against the disease, and are used when a person has already been exposed to or has contracted the disease, and are used when a person has already been exposed to or has contracted the disease. Diseases in which passive immunization is sometimes used include diphtheria, tetanus, botulism, and gas gangrene.

**service**

The conductors and equipment for delivering energy from the electricity supply system to the wiring system of the premises served.

**service brake**

The primary mechanism designed to stop a motor vehicle.

**service brake system**

A primary brake system used for slowing and stopping a vehicle.

**service cable**

Service conductors made up in the form of a cable.



**service conductors**

The supply conductors that extend from the street main or from transformers to the service equipment of the premises supplied.

**service connector**

The pipe that carries tap water from the public water main to a building.

**service consumed**

*Transit.* The amount of service actually used by passengers which is measured by unlinked passenger trips and passenger miles.

**service drop**

The overhead service conductors from the last pole or other aerial support to and including the splices, if any, connecting to the service-entrance conductors at the building or other structure.

**service-entrance cable**

A single conductor or multi-conductor assembly provided with or without an overall covering, primarily used for services and of the following types: *Type SE.* Having a flame-retardant, moisture-resistance covering, but not required to have inherent protection against mechanical abuse. *Type USE.* Recognized for underground use, having a moisture-resistance covering, but not required to have a flame-retardant covering or inherent protection against mechanical abuse. Single-conductor cables having an insulation specifically approved for the purpose do not require an outer covering.

**service entrance conductors, overhead system**

The service conductors between the terminals of the service equipment and a point usually outside the building, clear of building walls, where joined by tap or splice to the service drop.

**service entrance conductors, underground system**

The service conductors between the terminals of the service equipment and the point of connection to the service lateral. Where service equipment is located outside the building walls, there may be no service-entrance conductors, or they may be entirely outside the building.

**service equipment**

The necessary equipment, usually consisting of a circuit breaker or switch and fuses, and

their accessories, located near the point of entrance of supply conductors to a building or other structure, or an otherwise defined area, and intended to constitute the main control and means of cutoff of the supply.

**service life**

(1) *General.* The total life expectancy of a part or structure; service life starts with the manufacture of the structure and continues through all acceptance testing, handling, storage, transportation, operations, refurbishment, retesting, and retirement. (2) *Ordnance.* The period of time between the initial lot acceptance testing and the subsequent age surveillance testing.

**service raceway**

The raceway that encloses the service-entrance conductors.

**service supplied**

*Transit.* The amount of service actually made available to prospective passengers. Service supplied is measured in vehicles, miles, and/or hours that were operated.

**service time**

That period of time actually required for customer/user service.

**service vehicles**

The floating and rolling stock used in connection with keeping the revenue vehicles in operation.

**serviceability**

A measure of the ease with which a machine or system can be serviced.

**servomechanism**

Any device which senses the difference between a true state and some desired state and operates to bring a system toward the desired state.

**sesamoid bone**

Any class of bones which are small, have a generally rounded appearance, and are enclosed by tendons or other tissues at joints. May not be consistent across individuals. *See also patella.*

**set**

(1) *General.* Any defined collection of objects or data. (2) *Maritime Navigation.* Current or eddies that are not flowing in the natural direction. An opposite current or eddy that

tends to counteract the forward movement of a tow or vessel. (3) *Human Behavior*. The predisposition or readiness to receive and/or respond only to certain situations or in certain ways to a given stimulus.

**set (of current)**

*Maritime Navigation*. Deviation from normal current flow, caused by some obstruction such as pier, wall, sandbar, etc. For example, current set above some lock approaches due to flow of water through dam gates.

**set over**

*Maritime Navigation*. Movement of a dredge to allow vessels clear passage in a channel. Also, the arrangement of a tow in a lock whereby one barge is moved up abreast of the main body of a tow.

**set temp**

*Computing*. A command in the AUTO-EXEC.BAT file that tells programs where temporary files should be stored.

**set (tow)**

*Maritime Navigation*. A sideway movement of the tow caused by the current or wind. The set of the tow can be very important when the tow meets another tow in close quarters.

**set up**

Prepare a workstation, facility, or work item for carrying out a specific job or task.

**settleable solids**

Material heavy enough to sink to the bottom of a wastewater treatment tank.

**settlement policy**

Settlement encouraged by the EPA of a proceeding at any time after the issuance of a complaint if settlement is consistent with the provisions and the objectives of an act and the regulations. Whether or not the respondent requests a hearing, he/she may confer with the complainant concerning the facts stated in the complaint or concerning the appropriateness of the proposed remedial order. The terms of any settlement agreement shall be expressed in a written consent agreement.

**settling chamber**

A series of screens placed in the way of flue gases to slow the stream of air, thus helping gravity to pull particles out of the emission into a collection area.

**settling tank**

A holding area for wastewater, where heavier particles sink to the bottom for removal and disposal.

**settling velocity**

The velocity at which particles of specific sizes will settle out of the atmosphere due to the effect of gravity. Also referred to as the *terminal velocity*.

**setup allowance**

A special time allowance to cover a worker for the time required to prepare equipment of machinery for some process. Also referred to as *make-ready allowance*. See also *change-over allowance*.

**SEU**

See *speech enhancement unit*.

**Seventeenth Amendment**

Amendment of 1913 to the U.S. Constitution which transferred the election of U.S. Senators from the state legislature to the voters of the state, but provided that the legislature may empower the governor to make a temporary appointment to fill a vacancy until an election can be held.

**Seventh Amendment**

In Suits at common law, where the value in controversy shall exceed twenty dollars, the right of trial by jury shall be preserved, and no fact tried by a jury, shall be otherwise re-examined in any Court of the United States, than according to the rules of the common law.

**severable**

Admitting of severance or separation. Capable of being divided or severed from other things to which it was joined, and yet maintaining a complete and independent existence.

**several liability**

Liability separate and distinct from liability of another to the extent that an independent action may be brought without joinder of others. It exists where each of the parties specifically promises to be individually bound.

**severance damages**

In condemnation, where the property condemned constitutes only a part of the owner's interest, the owner is entitled to just compensation, not only for fair market value of the interest actually taken, but also such additional amount as will be equivalent to the

diminution or lowering, if any, of the fair market value of the owner's interest in the land which was taken.

**severe thunderstorm**

Intense thunderstorm capable of producing heavy showers, flash floods, hail, strong and gusty surface winds, and tornadoes.

**severity**

In accident analysis, a measure of the degree of loss incurred, such as time away from work, resulting from an accident.

**Severity Index (SI)**

A guideline for estimating the likelihood of injury from sudden accelerations. Equal to the integral over time of the acceleration curve duration (impulse).

**severity rate**

A formula applied to OSHA-recordable injuries that result in lost time from the workplace and expressed as the days-lost time x 200,000 number of hours of worked.

**sewage**

The waste and wastewater produced by residential and commercial establishments and discharged into sewers.

**sewage lagoon**

*See lagoon.*

**sewage sludge**

Sludge produced at a publicly owned treatment works, the disposal of which is regulated under the Clean Water Act.

**sewage treatment works**

Municipal or domestic waste treatment facilities of any type which are publicly owned or regulated to the extent that feasible compliance schedules are determined by the availability of funding provided by federal, state, or local governments.

**sewer**

A channel or conduit that carries wastewater and stormwater runoff from the source to a treatment plant or receiving stream. Sanitary sewers carry household, industrial, and commercial waste. Storm sewers carry runoff from rain or snow. Combined sewers are used for both purposes.

**sewerage**

The entire system of sewage collection, treatment, and disposal.

**sex**

A classification category for the male and female of a species.

**sex ratio**

The number of males per 100 females in the population.

**SGRP**

*See seating reference point.*

**SHA**

*See system/subsystem hazard analysis.*

**shade**

(1) To place in a shadow or shield from light. (2) To apply color in order to darken. (3) An area or region shielded from direct light, especially sunlight. (4) Any color which appears darker than a medium gray.

**shadow**

(1) A literal copy of something, as a database. (2) That dark image of an object created by placing the object between a source of direct or specularly reflected light and a background. (3) A font in which the appearance of shading is present.

**shadow controller**

A human operator who views the same display and uses the same type of hand controls as the real controller, but who has no connection to the active controls.

**shag**

*Transit (slang).* A small, city trailer.

**shake**

(1) A worker term for metal fume fever. (2) A separation along the grain of a piece of wood, most of which occurs between the rings of annual growth.

**shake the lights**

*Transit (slang).* The practice of blinking headlights as a warning signal.

**shake up a reef**

*Maritime Navigation.* To drive the tow at a sufficient speed to create a wake which, when it reaches a suspicious area, will cause the appearance of the reef to be shown by the turbulence.

**shale oil**

The hydrocarbon substance produced from the decomposition of kerogen when oil shale is heated in an oxygen-free environment. Raw

shale oil resembles a heavy, viscous, low-sulfur crude oil.

**shall**

With regard to regulatory requirements, "shall" means a mandatory action.

**shape coding**

The use of different shapes on control surfaces for distinguishing both visually and tactually between control devices.

**shaping out reef or shore**

Channel report term meaning steering tow so as to follow the contour of shore or reef.

**shaping up**

Getting tow in position to run crossing or bridge.

**shared roadway**

Any roadway upon which a bicycle lane is not designated and which may be legally used by bicycles regardless of whether such facility is specifically designated as a bikeway.

**Shaver's disease**

A disease of the lungs found in workers exposed to fumes containing aluminum oxide and silica in the process of smelting bauxite in the manufacture of corundum (a form of aluminum oxide). A type of pneumoconiosis, this disease is marked by opacities on x-ray film and is sometimes accompanied by decreased lung function. *See also bauxite fume pneumoconiosis.*

**shear**

*See wind shear.*

**sheathing**

A covering consisting of a smooth layer of wood placed over metal and secured to prevent any movement.

**sheep herder**

*Transit (slang).* A driver with questionable ability.

**sheer boom**

Same purpose as sheer fence, but a floating structure. *See also sheer fence.*

**sheer fence**

A series of pilings with tinted latticework attached, extending from bridge piers upstream and downstream to assist the navigator in passing through the narrow bridge spans without damage to the bridge or piers or the

vessel. Usually found at bridges that are lift, swing, or bascule types.

**sheet lightning**

A fairly bright lightning flash from distant thunderstorms that illuminates a portion of the cloud.

**Sheldon somatotype**

A body type classification system in which humans are divided into three basic groups: endomorph, mesomorph, and ectomorph.

**shelf life**

(1) *Battery.* The specified period of time a battery may be stored in a logistical environment and still perform to all required specifications when placed into service. (2) *Explosive.* The period of time between explosive loading and end use.

**shelterbelt**

A belt of trees or shrubs arranged as a protection against strong winds.

**SHF**

*See superhigh frequency.*

**shield**

(1) *Ionizing Radiation.* A material used to prevent or reduce the passage of ionizing radiation. Shielding is used to reduce exposures (worker, patient, etc.) to radiation emitted from sources. (2) *Nonionizing Radiation.* With regard to Rf energy, a metallic barrier that completely encloses a device for the purpose of preventing or reducing induced energy. *See also radio frequency (Rf).*

**shielded nonmetallic-sheathed cable**

A factory assembly of two or more insulated conductors in an extruded core of moisture-resistant, flame-resistant nonmetallic material, covered with an overlapping spiral metal tape and wire shield and jacketed with an extruded moisture, flame, oil, corrosion, fungus, and sunlight-resistant nonmetallic material.

**shielding**

Any material or obstruction that absorbs radiation and thus tends to protect personnel or materials from the effects of nuclear radiation exposure.

**shift**

(1) The period of the day during which a person works. (2) To change from one location,

position, level, or posture to another, often with respect to some fixed or reference point.

**shift maladaptation syndrome**

Any one or a combination of physical complaints of illness, injury, or fatigue resulting from an inability to adjust to a particular shift.

**shift work**

That work performed primarily by other than those working first shift, generally between the hours of 5 P.M. and 8 A.M., or that work performed by those working a rotating or other shift schedule.

**shifting bar**

A sandbar which moves under the influence of current, usually gradually down river. It may also shift from one side of the river to the other. A sunken log or tree or deep hole in the channel can cause current changes which will build up a bar even above or below the area.

**shin**

The anterior portion of the lower leg.

**shin splint**

A repetitive motion injury, typically from running or jogging, which results in pain in the anterior lower leg.

**shinbone**

See *tibia*.

**ship scaffold**

See *float scaffold*.

**shipper's export declaration**

A form required by the United States government for the compilation of statistics on trade both with foreign countries and with United States territories and possessions. It is necessary on practically every commercial shipment leaving the United States with the exception of mail shipments of small value.

**shipping**

Those activities involved in distributing finished products to the markets.

**shipping paper**

A shipping order, bill of lading, manifest, or other shipping document serving a similar purpose and containing the information required by 49 CFR 172.202, 172.203, and 172.204.

**ship's cargo handling gear**

That gear which is a permanent part of the vessel's equipment and which is used for the handling of cargo other than bulk liquids, but does not include gear which is used only for handling or holding hoses, handling ship's stores, handling the gangway, or boom conveyor belt systems for the self-unloading of bulk cargo vessels.

**ship's manifest**

A list, signed by the captain of a ship, of the individual shipments constituting the ship's cargo.

**ship's tackle**

All rigging, etc. utilized on a ship to load or discharge cargo.

**shipyard**

A yard or area where ships are built or repaired.

**SHM**

See *simple harmonic motion*.

**shoal**

(1) An area identified as a danger to maritime navigation containing an underwater offshore ridge, bank, or bar. (2) Shallow. (3) To grind a boat on the bottom. (4) A sandbank or sandbar formed by river currents.

**shock**

(1) See *cardiovascular shock*. (2) A physiologic response to bodily trauma, usually characterized by a rapid fall in blood pressure following an injury, operation, contact with electrical current, or other insult on the body. See also *electrical shock*.

**shoe**

A form of footwear which has a hard sole, covers the majority of the foot surface, and whose uppermost portion is generally lower than the lateral malleolus height.

**shop rule**

Any of a set of regulations established either by an employer, by collective bargaining, or by a union constitution.

**shore**

That part of the land in immediate contact with a body of water including the area between high and low water lines.

**shoreline**

The line of contact between a body of water and the land.

**short-circuiting**

A situation that occurs when the supply air flows to exhaust registers before entering the breathing zone. To avoid short-circuiting, the supply air must be delivered at a temperature and velocity that result in mixing throughout the space.

**short cut**

*Aviation.* A course different from the customary one taken by a pilot.

**short-interval scheduling**

See *batching*.

**short-term**

A brief period of time, which may range from seconds to minutes to days, depending on the magnitude of the referenced time scale.

**short-term exposure limit (STEL)**

The concentration to which workers may be exposed continuously for a short period of time (usually 15-minutes) without suffering adverse health effects.

**short-term memory**

See *working memory*.

**short ton**

A unit of weight equal to 2,000 pounds. See also *ton*.

**shortwave**

In the atmosphere, a small wave that moves around longwaves in the same direction as the air flow in the middle and upper troposphere. Shortwaves are also called *shortwave troughs*.

**shortwave radiation**

A term most often used to describe the radiant energy emitted from the sun, in the visible and near ultraviolet wavelengths.

**shotblasting**

A method for cleaning surfaces employing steel shot. A generic term for the cleaning of surfaces using abrasive cleaning agents.

**shotgun**

Nonscientific term for the process of breaking up the DNA derived from an organism and then moving each separate and unidentified DNA fragment into a bacterium.

**shoulder**

(1) *Anatomy.* The joint which connects the arm to the trunk/body and all local tissues associated with that region. (2) *Aviation.* An area adjacent to the edge of paved runways, taxiways, or aprons providing a transition between the pavement and the adjacent surface; support for aircraft running off the pavement; enhanced drainage; and blast protection.

**shoulder breadth**

See *biacromial breadth*.

**shoulder circumference**

The surface distance around the torso and shoulders at the level of the greatest lateral protrusions of the deltoid muscles. Measured with the individual standing or sitting erect and the upper arms hanging naturally at his/her sides.

**shoulder – elbow length**

The vertical distance from acromiale to the bottom of the elbow. Measured with the individual sitting or standing erect, the upper arm vertical, and the elbow bent 90° so the forearm is horizontal.

**shoulder – grip length**

The horizontal linear distance from a wall to a pointer held in a clenched fist. Measured with the individual standing or sitting against the wall, with the elbow fully extended forward and the arm horizontal.

**shoulder harness**

A strap, belt, or other means of restraint which crosses the shoulder region, usually for the purpose of holding the torso, shoulders, and/or back against a rigid object to prevent or minimize injury in the event of impact. Also referred to as *shoulder strap* and *shoulder belt*.

**shoulder length**

The surface distance laterally from acromiale in a medial direction to the junction of the shoulder and the neck at which the tissue angle between the two is 45°.

**shoveling**

Improper loading of freight.

**show window**

Any window used or designed to be used for the display of goods or advertising material,



whether it is fully or partly enclosed or entirely open at the rear and whether or not it has a platform raised higher than the street floor level.

### **shunt**

(1) To turn to one side; to divert. (2) An anomalous or artificially created passage connecting two main channels, and diverting (blood) flow from one to the other. (3) A conductor connecting two points in an electric circuit, so as to receive a portion of the current of the main circuit. A bypath in an electrical circuit. *See also* [switch shunting circuit](#).

### **shunt fouling circuit**

The track circuit in the fouling section of a turnout, in multiple connections with the track circuit in the main track. *See also* [switch shunting circuit](#).

### **shunt wire**

A wire forming part of a shunt circuit.

### **shut in**

Closed temporarily; wells and mines capable of production may be shut in for repair, cleaning, inaccessibility to a market, etc.

### **shutdown allowance**

A special-case time allowance in those situations where a worker has to turn off or otherwise shut down equipment or machines at the end of a work period.

### **shuttle**

(1) *Transportation*. A public or private vehicle that travels back and forth over a particular route, especially a short route or one that provides connections between transportation systems, employment centers, etc. (2) *Aerospace*. A manned space flight vehicle used to transport astronauts and various specialized payloads to and from low earth orbit. A major component of the U.S. Space Transportation System (STS), which includes an orbiter vehicle (commonly referred to as the shuttle), the twin solid rocket boosters (SRBs), and the external tank (ET) which carries the propellant fuel and oxidizer that power the orbiter's main engines during the liftoff and orbit insertion phase of an STS mission. Upon completion of its mission, the orbiter vehicle, or shuttle, returns to earth as a powerless glider and lands like an airplane on a special run-

way. The orbiter is then serviced and prepared for its next mission.



*Space shuttle (orbiter) landing at Edward's Air Force Base, CA*

### **SHWS**

*See* [state hazardous waste sites](#).

### **SI**

Systeme International. *See also* [Severity Index](#).

### **Siamese twins**

An outdated term for conjoined twins. Identical (monozygotic) twins joined together at birth. The connection may be slight or extensive. It involves skin and usually muscles or cartilage of a limited region, such as the head, chest, hip, or buttock. The twins may share a single organ, such as an intestine, or occasionally may have parts of the spine in common. If joined superficially, the conjoined twins are easily separated by surgery soon after birth.

### **Siberian high**

A strong, shallow area of high pressure that forms over Siberia in winter.

### **SIC Codes**

A system that assigns a four-digit code set forth in the Standard Industry Classification (SIC) Manual which describes the products made by a particular facility. These codes describe industries only and not occupations within those industries. Also, the table of SIC Codes strongly emphasizes heavy industry and manufacturing and does not adequately address society's move to a more service industry economy. Upper level codes (two digits) and their descriptions are as follows. Note that each upper level code is further divided into lower level codes within the respective category which break down the

specific industry to separate sectors within that industry code.

SIC CODE	SIC CODE DESCRIPTION
01	Agricultural Products – Crops
02	Agricultural Products - Livestock
07	Agricultural Services
08	Forestry
09	Fishing, Hunting, and Trapping
10	Metal Mining
12	Coal Mining
13	Oil and Gas Extraction
14	Nonmetallic Minerals, Except Fuels
15	General Building Contractors
16	Heavy Construction, Excluding Building
17	Special Trade Contractors
20	Food and Kindred Products
21	Tobacco Products
22	Textile Mill Products
23	Apparel and Other Textile Products
24	Lumber and Wood Products
25	Furniture and Fixtures
26	Paper and Allied Products
27	Printing and Publishing
28	Chemicals and Allied Products
29	Petroleum and Coal Products
30	Rubber & Miscellaneous Plastic Products
31	Leather and Leather Products
32	Stone, Clay, and Glass Products
33	Primary Metal Industries
34	Fabricated Metal Products
35	Industrial Machinery and Equipment
36	Electronic and Other Electric Equipment
37	Transportation Equipment
38	Instruments and Related Products
39	Miscellaneous Manufacturing Industries
40	Railroad Transportation
41	Local and Interurban Passenger Transit
42	Trucking and Warehousing
43	U.S. Postal Service
44	Water Transportation
45	Transportation by Air
46	Pipelines, Except Natural Gas
47	Transportation Services
49	Electric, Gas, and Sanitary Services
50	Wholesale Trade - Durable Goods
51	Wholesale Trade - Nondurable Goods
52	Building Materials and Garden Supplies
53	General Merchandise Stores
54	Food Stores
55	Automotive Dealers and Service Stations
56	Apparel and Accessory Stores
57	Furniture and Home Furnishing Stores
58	Eating and Drinking Places
59	Miscellaneous Retail
60	Depository Institutions
61	Nondepository Institutions
62	Security and Commodity Brokers
63	Insurance Carriers
64	Insurance Agents, Brokers, and Service
65	Real Estate
67	Holding and Other Investment Offices
70	Hotels and Other Lodging Places
72	Personal Services

73	Business Services
75	Auto Repair, Services, and Parking
76	Miscellaneous Repair Services
78	Motion Pictures
79	Amusement and Recreation Services
80	Health Services
81	Legal Services
82	Educational Services
83	Social Services
84	Museums, Botanical, Zoological Gardens
86	Membership Organizations
87	Engineering and Management Services
88	Private Households
89	Services, Nec
91	Executive, Legislative, and General
92	Justice, Public Order, and Safety
93	Finance, Taxation, and Monetary Policy
94	Administration of Human Resources
95	Environmental Quality and Housing
96	Administration of Economic Programs
97	National Security & International Affairs
98	U.S. Government, Nec
99	Nonclassifiable Establishments

### sick building syndrome (SBS)

Term sometimes used to describe situations in which building occupants experience acute health and/or comfort effects that appear to be linked to time spent in a particular building but where no specific illness or cause can be identified. The complaints may be localized in a particular room or zone or may be spread throughout the building. *See also tight building syndrome (TBS).*

### sick horse

*Transit (slang).* A tractor in poor mechanical condition, especially with low power.

### sick leave

An employee benefit providing a certain amount of time in which a worker is permitted to be absent due to illness or accident without loss of job, seniority, and usually pay.

### sickle cell

A crescentic or sickle-shaped erythrocyte, the abnormal shape caused by the presence of varying proportions of hemoglobin.

### SID

*See standard instrument department.*

### side collision

*Rail Operation.* A collision at a turnout where one consist strikes the side of another consist.

### side extremities

The outermost point on the sides of the vehicle. Nonstructural protrusions such as tail

lights, hinges, and latches are excluded from the determination of the outermost point.

**side facing glazing location**

*Rail Operations.* Any location where a line perpendicular to the plane of the glazing material makes an angle of more than 50 degrees with the centerline of the locomotive, caboose or passenger car.

**side line**

Lashing used to hold two barges side by side.

**side marker lamp (intermediate)**

*Transit.* A lamp shown to the side of a trailer to indicate the approximate middle of a trailer 30 feet or more in length.

**side marker lamps**

*Transit.* Lamps used on each side of a trailer to indicate its overall length.

**side-rolling ladder**

A semi-fixed ladder, nonadjustable in length, supported by attachments to a guide rail, which is generally fastened to shelving, the plane of the ladder being also its plane of motion.

**side shield**

A device of metal or other material hinged or fixed firmly to a spectacle to protect the eye from side exposure.

**side-step ladder**

A ladder from which a person getting off at the top must step sideways from the ladder in order to reach the landing.

**siderosis**

A pneumoconiosis resulting from the inhalation of iron particulate. *See also arc-welder's disease.*

**sideswipe collision**

A collision of two vehicles in which the sides of both vehicles sustain minimal engagements.

**sidetone**

The feedback signal from a speaker's microphone which is returned to the speaker through his/her earphones.

**siding**

An auxiliary track for meeting or passing trains.

**siding/spur railway**

Track connected with the primary track, sometimes leading to a production or storage site, and used for passing, temporary storage, or loading and unloading of railway cars.

**sievert (Sv)**

SI unit of any of the quantities expressed as dose equivalent. The dose equivalent in sieverts is equal to the absorbed dose in grays multiplied by the quality factor. One sievert is equal to 100 rems.

**sight**

*See vision.*

**sight time**

The temporal interval from the point at which a visual stimulus is recognized to that point at which a response must be made.

**sightseeing operations**

Special service involving the transportation of passengers assembled into a travel group by the carrier and specifically designed to service some special purpose beyond mere public transportation. Such special service is to be distinguished from service which solely contemplates expeditious service between fixed points on a fixed route according to a predetermined schedule.

**SIGMET**

*See Significant Meteorological Convective.*

**sign**

(1) A placard or posting that provides some type of information, warning, caution, advisory, etc. (2) A roadway-associated feature which provides information to people passing.

**sign test**

A non-parametric statistical test involving the use of only plus and minus signs for analysis.

**signal**

That information conveyed via audible, electromagnetic, mechanical, or other means.

**signal detection**

The observation and/or reporting of a signal.

**signal detection theory**

A psychophysical model in which decisions as to whether a signal is judged to be present against a background are based on an individual's evaluation of the risks involved and the signal-to-noise ratio. *See also d' and signal-to-noise ratio.*

**signal-to-noise ratio (SNR)**

The magnitude of a signal relative to that of any accompanying and/or background noise. Also referred to as *signal-noise ratio* and *S/N ratio*.

**signal words**

The words used on a pesticide label (Danger, Warning, Caution) to indicate the level of toxicity of the chemicals.

**signaling circuit**

Any electric circuit that energizes signaling equipment.

**signature**

Any characteristic pattern or information generated by an individual or system which is repeatable under similar circumstances and can be used to recognize that individual or system.

**significant deterioration**

Pollution resulting from a new source in previously "clean" areas. *See also prevention of significant deterioration.*

**Significant Meteorological Convective (SIGMET) Information**

*Aviation.* A weather advisory concerning convective weather significant to the safety of all aircraft. Convective SIGMETs are issued for tornadoes, lines of thunderstorms, embedded thunderstorms of any intensity level, areas of thunderstorms greater than or equal to level 4 with an area coverage of 4/10 (40%) or more, and hail 3/4 inch or greater.

**significant municipal facilities**

Those publicly owned sewage treatment plants that discharge a million gallons per day or more and are therefore considered by states to have the potential for substantial effect on the quality of receiving waters.

**significant new use notice (SNUN)**

*See significant new use rule.*

**significant new use rule (SNUR)**

Under the Toxic Substances Control Act (TSCA), a SNUR requires anyone who wants to manufacture or process a chemical substance for a use that EPA has determined is a "significant new use" to give EPA 90 calendar days prior notice. This "notice" is referred to as a *significant new use notice*, or *SNUN*.

**significant violation**

Violations by point source dischargers of sufficient magnitude and/or duration to be considered a regulatory priority.

**signpost**

Any highway signage conveying information to drivers.

**SIL**

*See speech interference level.*

**silent witness theory**

This theory permits admission of photographic evidence at trial as substantive, rather than merely demonstrative, evidence where there is proof that photographs have not been altered, and no witness is required to testify that a photograph accurately represents what he or she observed.

**silica**

Crystalline silicon dioxide, occurring as quartz, tridymite, or cristobalite.

**silica gel**

A regenerative adsorbent material consisting of amorphous silica which can be used as a solid sorbent for sampling airborne contaminants.

**silicosis**

A lung disease caused by long-term exposure to silica dusts and crystals. It is marked by a loss of elasticity of the lung tissue and development of silica-containing nodules in the lungs, resulting in decreased lung function, shortness of breath, enlargement of the heart, and often lung cancer. Silicosis takes about ten years of fairly constant exposure to develop. It may give few warning symptoms. As time passes, an affected person experiences progressive shortness of breath, along with steady coughing which in the early stages is dry and unproductive of mucus. Later there may be mucus tinged with blood, loss of appetite, pain in the chest, and general weakness. The silica produces a reaction that scars the lungs and makes them receptive to the further complications of bronchitis and emphysema. Persons with silicosis are also more susceptible to tuberculosis. Also known as *miner's asthma*, *grinder's consumption*, *miner's phthisis*, *potter's rot*, and *stonemason's disease*.

**silicotuberculosis**

A tuberculous infection of the silicotic lung.

**sill**

A horizontal beam forming the bottom of an entrance to a lock.

**silo-filler's disease**

Pulmonary inflammation, often with acute pulmonary edema, resulting from the inhalation of irritant gases, particularly nitrogen dioxide, which collect in recently filled silos (i.e., from fresh green silage).

**silt**

Fine particles of sand or rock that can be picked up by the air or water and deposited as sediment.

**silver**

A chemical element, atomic number 47, atomic weight 107.870, symbol Ag.

**silver solder**

A brazing material which may contain cadmium. Exposure to cadmium fumes may occur if this filler metal contains cadmium.

**silviculture**

Management of forest land for timber. Sometimes contributes to water pollution, as in clear-cutting.

**similarity estimate**

A judgement as to which two of three given items are more similar along one or more dimensions.

**similitude effect**

See *color assimilation*.

**simo chart**

See *simultaneous motion chart*.

**simple asphyxiant**

Physiological inert gases which act when they are present in the atmosphere in sufficient quantity to exclude an adequate supply of oxygen in the atmosphere being breathed.

**simple harmonic motion (SHM)**

That motion with reference to an axis in which the perpendicular displacement of an object from a given point on the line is proportional to its acceleration toward that point and a sinusoidal function of time.

**simple negligence**

Consists of failure to exercise for protection of others that degree of care and caution that would, under prevailing circumstances, be exercised by an ordinarily prudent person.

**simple reaction time**

The temporal interval required to initiate a single predetermined response to a single predetermined stimulus.

**simple reflex**

A motor reaction to an external stimulus where the neural signal is sent directly to the effector by a spinal motor neuron without input from the brain.

**simple sound source**

A source that radiates sound uniformly in all directions under free-field conditions.

**simple sugars**

Carbohydrates with a relatively simple molecular structure. Known also as *monosaccharides* and *disaccharides*. Fruits and table sugar are examples of simple sugars.

**simulate**

Carry out certain test conditions in an attempt to duplicate as much as possible actual field operations or conditions as a model for training or experimental purposes.

**simulator**

Any device or apparatus used to simulate one or more conditions.

**simulator fidelity**

A measure of the degree of representation accuracy which a simulator has for the real-world system.

**simultaneous color contrast**

See *chromatic contrast*.

**simultaneous contrast**

An apparent change in the intensity or other quality of one stimulus due to the presence of an adjacent stimulus which differs from the reference along some dimension such that the differences appear to be magnified. See also *chromatic contrast*.

**simultaneous lightness contrast**

An alteration in the apparent lightness or brightness of one stimulus due to the presence of a different lightness stimulus.

**simultaneous masking**

The masking of an auditory stimulus provided by a stronger signal at a different frequency.



**simultaneous motion**

The performance of two or more elemental motions concurrently by different body members.

**simultaneous motion chart**

A chart for recording work involving simultaneous motion, and containing a minimum of columns for a therblig or motion symbol abbreviation, time value, and the body member involved. May also be referred to as a *simo chart*, *simultaneous motion cycle chart*, and *micromotion data*.

**simultaneous motion cycle chart**

See *simultaneous motion chart*.

**sine**

A trigonometric function, represented by the value of the ratio between the side opposite an acute angle of a right triangle to the hypotenuse of that triangle.

**single**

*Maritime*. A particular lockage of a tow, used when the tow is too long to enter the lock chamber and must be uncoupled. The towboat, and possibly one other barge, must move up alongside the forward part of the tow to lock through the entire tow at one time or in one lockage.

**single axle weight**

The total weight transmitted to the road by all wheels whose centers may be included between two parallel transverse vertical planes 40 inches apart, extending across the full width of the vehicle. The federal single axle weight limit on the Interstate System is 20,000 pounds.

**single failure point analysis**

(1) *General*. An analysis to identify single failure points. (2) *Mechanical Systems*. A load path analysis. A stress analysis of the resultant system after first load path failure (of a single failure point). Twice the resultant dead weight is used in the analysis for the sudden redistribution of the load, and an allowable stress of 90 percent of the ultimate materials stress is used.

**single ladder**

A non-self-supporting portable ladder, non-adjustable in length, consisting of only one section. Its size is designated by the overall length of the side rail.

**single packaging**

A non-bulk packaging other than a combination packaging.

**single point adjustable suspension scaffold**

A manually or power-operated unit designed for light duty use, supported by a single wire rope from an overhead support so arranged and operated as to permit the raising or lowering of the platform to desired working positions.

**single pole scaffold**

Platforms resting on putlogs or crossbeams, the outside ends of which are supported on ledgers secured to a single row of posts or uprights and the inner ends of which are supported on or in a wall. See also *putlog* and *ledger*.

**single receptacle**

See *receptacle (2)*.

**single set over**

See *knockout single*.

**single shift**

An operating mode in which all workers are working the same shift, usually the first shift.

**single trailer five-axle truck**

All five-axle vehicles consisting of two units, one of which is a tractor or straight truck power unit.

**single underline**

A highlighting technique in which one line is drawn below a set of text.

**single-unit truck**

A medium or heavy truck in which the engine, cab, drive train, and cargo area are all one chassis. Includes two-axle, four-tire trucks and other single unit trucks.

**sinistral**

Having a left-handed preference in motor activity.

**sink/rise**

The place at which a stream disappears underground or reappears at the surface in a karst area.

**sinking**

(1) Controlling oil spills by using an agent to trap the oil and sink it to the bottom of the body of water where the agent and the oil are biodegraded. (2) Losing enough buoyancy to settle below the surface of the water. See also *swamping*.



**sinoatrial node**

A small strip of specialized muscle tissue in the heart which generates the normal heart rhythm. Also called the *sino-atrial node*. May be abbreviated *S-A node* or simply referred to as *sinus*, *sinuatrial node*, and/or *cardiac pacemaker*.

**sinus**

(1) Any cavity in the frontal portion of the skull. (2) See [sinoatrial node](#).

**sinus arrhythmia**

An irregular heart stimulation rhythm by the sinoatrial node.

**sinus block**

The failure of one or more sinus cavities to equalize pressure due to blockage of the duct leading to the sinus cavity.

**sinusitis**

Inflammation of one or more of the paranasal sinuses, often occurring during an upper respiratory infection, when infection in the nose spreads to the sinuses (sometimes encouraged by excessively strong blowing of the nose).

**sinusoidal**

Varying over time with approximation to a sine wave.

**SIP**

See [state implementation plan](#).

**siphon**

(1) Designed to convey water by gravitational force over, or under, an obstruction. (2) a bent tube with arms of unequal length, for drawing liquid from one receptacle to another. (3) To draw liquid from one receptacle to another by means of a siphon.

**site**

Area(s) where a hazardous substance has been deposited, stored, disposed, or placed, or has otherwise come to be located. Such areas include multiple sources and may include the area between sources.

**site characterization**

Under the Federal Nuclear Waste Policy of 1982: Siting research activities with respect to a test and evaluation facility at a candidate site. Also activities, whether in the laboratory or in the field, undertaken to establish the geologic condition and the ranges of the parameters of a candidate site relevant to the location of a repository, including borings,

surface excavations, excavations of exploratory shafts, limited subsurface lateral excavations and borings, and in situ testing needed to evaluate the suitability of a candidate site for the location of a repository, but not including preliminary borings and geophysical testing needed to assess whether site characterization should be undertaken.

**site inspection**

As pertains to CERCLA, the collection of information from a Superfund site to determine the extent and severity of hazards posed by the site. It follows and is more extensive than a preliminary assessment. The site inspection gathers the information required to score the site, using the Hazard Ranking System (HRS), and to determine if the site presents an immediate threat that requires prompt removal actions.

**siting**

The process of choosing a location for a facility.

**siting research**

Under the Federal Nuclear Waste Policy of 1982: Activities, including borings, surface excavations, shaft excavations, subsurface lateral excavations and borings, and in situ testing, to determine the suitability of a site for a test and evaluation facility.

**sitting**

Pertaining to a posture in which the torso is approximately vertical, the hips are flexed about 90°, and the knees are flexed between approximately 45° and maximum flexion.

**sitting height**

The vertical linear distance from the sitting surface to the vertex plane. Measured with hair compression, the individual sitting erect, looking straight ahead, the knees flexed about 90°, and with a non-compressible seat at approximately the politeal height.

**sitting height, relaxed**

The vertical distance from the sitting surface to the vertex plane. Measured with the individual sitting relaxed, looking straight ahead with a non-compressible seat at approximately the politeal height, and the knees flexed about 90°.

**situational error**

A human error attributable primarily to a faulty design of the working environment.

**situational factor**

Any job characteristic which is not directly a part of a job performance itself, but is associated with the job, through management pressures, personalities, or other variables.

**six banger**

*Transit (slang)*. A six-cylinder engine.

**Sixteenth Amendment**

An Amendment of 1913 to the U.S. Constitution, which permits Congress to tax incomes, "from whatever source derived, without apportionment among the several states, and without regard to any census or enumeration."

**Sixth Amendment**

Amendment to the U.S. Constitution includes such rights as the right to a speedy and public trial by an impartial jury, the right to be informed of the nature of the accusation, the right to confront witnesses, and the right to assistance of counsel and compulsory process.

**sixty-day notice**

Under the Taft-Hartley Act, notice which must be given by either party to a collective bargaining agreement for the reopening or the terminating of the contract. During this period, strikes and lockouts are prohibited.

**size coding**

The use of different sized controls to indicate different functions.

**skeletal link**

The straight-line distance between any two joint centers of rotation.

**skeletal muscle**

That muscle type having a heavily striated appearance and which is generally voluntary and attached to or involved in moving bone or cartilage.

**skeletal system**

The body's framework of bones, also called the *skeleton*. The skeleton of an average adult consists of 206 distinct bones.

**skeleton**

The bones of the body configured in their normal relationships.

**skelic index**

The value of the ratio of leg length to torso length.

**skewed**

A property of a statistical distribution indicating a lack of symmetry around the mean such that the observations are concentrated to the left or right of the mean.

**skewness**

The tendency of a distribution to depart from symmetry around the mean.

**skiff**

A small, hand-propelled rowboat. Sometimes called a *yawl*.

**skill**

An organized or coordinated activity pattern comprising a task at which some training or practice is normally required to become proficient.

**skill-based behavior**

An operating mode in which the individual performs some highly practiced task without the need for conscious intervention following initiation of the activity.

**skilled witness**

One possessing knowledge and experience regarding a particular subject which are not acquired by ordinary persons. Such witnesses are allowed to give evidence on matters of opinion and abstract fact. See also expert witness.

**skimming**

Using a machine to remove oil or scum from the surface of the water.

**skin**

The organ covering the surface of the body. The skin is the largest organ of the body, and it performs a number of vital functions. It serves as a protective barrier against microorganisms. It helps shield the delicate, sensitive tissues underneath from mechanical and other injuries. It acts as an insulator against heat and cold, and helps eliminate body wastes in the form of perspiration. It guards against excessive exposure to the ultraviolet rays of the sun by producing a protective pigmentation, and helps produce the body's supply of vitamin D. Its sense receptors enable the body to feel pain, cold, heat, touch, and pressure. The skin consists of two main parts: an outer layer, the epidermis; and an inner layer, the corium (dermis, true skin). The epidermis is thinner

than the corium, and is made up of several layers of different kinds of cells. The number of cells varies in different parts of the body; the greatest number is in the palms of the hands and soles of the feet, where the skin is the thickest. The cells in the outer or horny layer of the epidermis are constantly being shed and replaced from its bottom layers in the lower epidermis. The cells of the protective horny layer are nonliving and require no supply of blood for nourishment. As long as the horny outer layer remains intact, microorganisms cannot enter. Underneath the epidermis is the thicker part of the skin, the corium, or dermis, which is made up of connective tissue that contains blood vessels and nerves. The corium projects into the epidermis in ridges called papillae of the corium. The nerves that extend through the corium end in the papillae. The various skin sensations, such as touch, pain, pressure, heat, and cold, are felt through these nerves. The reaction to heat and cold causes the expansion and contraction of the blood capillaries of the corium. This, in turn, causes more or less blood to flow through the skin, resulting in greater or smaller loss of body heat. The sweat glands are situated deep in the corium. They collect fluid containing water, salt, and waste products from the blood and carry it away in canals that end in pores on the skin surface, where it is deposited as sweat. Perspiration helps regulate body temperature as well, because cooling of the skin occurs when sweat evaporates. The sebaceous glands are also in the corium. They secrete the oil that keeps the skin surface lubricated. Beneath the corium is a layer of subcutaneous tissue. This tissue helps insulate the body against heat and cold, and cushions it against shock. The hair and nails are outgrowths of the skin. The roots of the hair lie in follicles, or pockets of epidermal cells situated in the corium. Hair grows from the roots, but the hair cells die while still in the follicles, and the closely packed remains that are pushed upward form the hair shaft that is seen on the surface of the skin. The nails grow in much the same way as the hair. The nail bed, like the hair root, is situated in the corium. The pink color of the nails is due to their translucent quality which allows the blood capillaries of the corium to show through.

**skin carcinogen**

A substance or physical agent which can produce skin cancer.

**skin conductance response (SCR)**

A rise in skin surface conductance following some triggering event. *See also skin resistance response.*

**skin contamination**

The presence of a hazardous substance on the skin, presenting the potential for initiation, corrosive action, sensitization, skin absorption, etc.

**skin dose**

(1) *General.* The dose applied to the surface of the skin or the dose received as a result of skin absorption. (2) *Radiology.* The dose at the center of an irradiation field on skin.

**skin graft**

A bit of skin implanted to replace a lost part of the integument.

**skin notation**

TLVs having a "skin" notation refers to the potential contribution to the overall exposure to the substance by absorption through the skin, mucous membranes, or the eye upon contact with the material or its vapor.

**skin resistance response (SRR)**

A decrease in the electrical resistance measured between two points on the skin surface within seconds after some triggering event. Also referred to as *galvanic skin response* and *galvanic skin reflex*. *See also skin conductance response.*

**skin rule**

A task design guideline that pressure from objects should not be concentrated on small areas of the skin.

**skin wetness**

A measure of heat stress, based on the amount of sweating.

**skinfold**

A pinch of surface body tissue consisting of a double fold of skin and its associated subcutaneous fatty tissue for determining the amount and distribution of body fat. Usually selected from standardized sites. Also referred to as fatfold.

### skinfold caliper

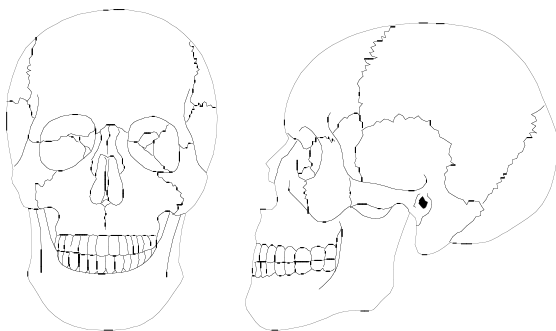
A spring-loaded caliper which exerts a standardized pressure per unit area and is designed to provide an estimate of skinfold thickness for body fat determinations.

### skinfold measurement

The process of obtaining or that data obtained from the use of a skinfold caliper in measurement of the thickness of a pinch of skin in specified body areas for estimating the percentage of body fat.

### skull

The collection of bones making up the head, enclosing and protecting the brain. The skull consists of two parts, the cranium and the facial section. The cranium is the domed top, back, and sides of the skull. It is formed by comparatively large, smooth, and gently curved bones connected to each other by dovetailed joints called sutures, which permit no movement and make the mature skull rigid. The facial bones are smaller and more complex than the cranial bones. None of them are movable, except the mandible, which is hinged to the rest of the skull. The skull protects the brain, the curve of the cranium serving to deflect blows, and it also protects the eyes, ears, and nose, which are surrounded by bone and recessed in the skull. The skull is supported by the highest vertebra, called the atlas. This joint permits a back-and-forth, nodding motion. The atlas turns on the vertebra below it, the axis, allowing the skull to turn from side to side.



*The human skull*

### sky diving

The practice of voluntarily jumping out of an undamaged and still flying aircraft for the purpose of personal enjoyment or professional occupation (i.e., not for the purpose of evacuation). Sky diving requires extensive training and jumpers must receive specific

certification by trained and qualified instructors before being permitted to perform a solo sky dive (i.e., by themselves). Prior to achieving this certification, jumps are usually made in *tandem*, meaning the instructor and student jump together with the instructor on top and the student underneath the instructor. The tandem jumpers are usually connected and the instructor is the only one who releases a parachute when the timing is proper. In this manner, the instructor can talk to and advise the student throughout the jump. Sky diving is an extremely risky practice but it can be done safely under the proper controls and observance of specific safety protocols.



*Sky divers must understand the risks and safety measures required to ensure a safe and successful jump*

### slag

The fused and vitrified matter separated during the conversion of an ore to the metal product.

### slag wool

Fibrous material made from the slag residue of the steel-making process. Similar to rock wool.

**slander**

The speaking of base and defamatory words tending to prejudice another in his/her reputation, community standing, office, trade, business, or means of livelihood.

**sleep**

A periodically occurring behavior in which the eyelids are closed and inactive, consciousness appears reduced, and the EEG produces a distinctive waveform cycle. During sleep, the body processes slow down so that tissues and organs can recuperate from previous activity. For the brain, sleep is even more vital. Experiments and actual practice have shown that lack of sleep, which actually has little physical effect on the body if there has been adequate rest, seriously disturbs the mental processes. After 30 to 60 hours of continuous sleeplessness, such reactions as irritation, loss of memory, hallucinations, and even symptoms of schizophrenia may begin to appear.

**sleep debt**

That amount of additional sleep which is required to feel properly rested or not fatigued due to sleep deprivation.

**sleep deprivation**

A condition in which an inadequate amount of sleep is obtained.

**sleep disturbance**

Any interference with normal sleeping habits, regardless of cause.

**sleep mode**

With regard to computers, a feature which allows the user to reduce the amount of power consumed by a computer while it is not in use. Particularly applicable to laptop computers.

**sleep period shifting**

The process of advancing or delaying the sleep period for some length of time to accommodate a work schedule or other activities.

**sleep-wake cycle**

A circadian rhythm in which normally about two-thirds of the cycle is spent awake and about one-third of the cycle asleep.

**sleepiness**

A state of fatigue in which an individual tends to fall asleep easily.

**sleeping pills**

See *barbiturate*.

**sleeping sawyer**

A submerged heavy timber hazardous to the vessel.

**sleeping sickness**

The popular name for encephalitis, an inflammation of the brain and its coverings, the meninges.

**sleet**

A type of precipitation consisting of transparent pellets of ice 5 mm or less in diameter. Same as *ice pellets*.

**sleeve**

That portion of an article of clothing normally intended to cover all or part of the arm.

**sleeve inseam**

The linear distance from scye past the elbow to the level of the base of the thumb. Measured with the elbow fully extended.

**sleeve inseam – posterior**

The surface distance along the lateral edge of the arm over the olecranon from a point on the shoulder in the scye circumference plane to the distal end of the ulna. Measured with the individual standing erect and the proximal phalanges of the fist placed on the hip.

**sleeve length segment – spine to elbow**

The surface distance from the midline of the spine to the tip of the elbow. Measured with the individual standing erect, the arms held in a horizontal plane at shoulder level, the elbows flexed as required, and the proximal phalanges of the fists from each hand touching.

**sleeve length segment – spine to scye**

The surface distance from the midline of the spine to scye. Measured with the individual standing erect, the arms held in a horizontal plane at shoulder level, the elbows flexed as required, and the proximal phalanges of the fists from each hand touching.

**sleeve length segment – spine to wrist**

The surface distance from the midline of the spine to the ulnar styloid process. Measured with the individual standing erect, the arms held in a horizontal plane at shoulder level, the elbows flexed as required, and the proximal phalanges of the fists from each hand touching.

**slide**

A waterborne skid of a tow to momentum and current (encountered downbound only).

**slider bar**

A computer display graphic for use in direct manipulation to select a value from a continuous range of values for some parameter.

**sliding**

Uncontrolled sideway movement of vessel.

**sliding caliper**

A caliper which has a vernier mechanism in which one portion slides with respect to another, fixed portion to provide the measurement desired.

**slight care**

*Law.* Care such as persons of ordinary prudence usually exercise about their own affairs of slight importance. Or, it is that degree of care which a person exercises about his/her own concerns, though he/she may be a person of less than common prudence or of careless and inattentive disposition. *See also care and reasonable care.*

**slimicide**

A product used for the prevention or inhibition of the formation of biological slimes in industrial water-cooling systems and other applications.

**sling**

A lifting assembly and associated hardware used between the load and the hoisting device hook.

**sling psychrometer**

A device used to determine the properties of moist air by measuring the dry and wet bulb temperatures on thermometers fitted to a handle that enables their rapid rotation and the consequent evaporation of water from a wick placed over the bulb of the wet bulb thermometer. The resulting temperatures (dry and wet bulb) are aligned on a psychrometric chart to determine the properties of the air.

**slip line**

A line around timberhead so arranged that one end may be released while boat is backing away from dock.

**slip resistant material**

Any material designed to minimize the accumulation of grease, ice, mud, or other debris and afford protection from accidental slipping.

**slip-seat**

Relay operation where drivers are changed periodically, but the truck continues from origin to destination.

**slipped disk**

The popular name for rupture of an intervertebral disk. The condition occurs most commonly in the lower back, occasionally in the neck, and rarely in the upper portion of the spine. Pads of cartilage and fiber enclosing a rubbery tissue known as the nucleus pulposus lie between the vertebrae. They act as cushions between the vertebrae, absorbing ordinary shocks and strains and shifting positions to accommodate the various movements of the spine. Excessive strain may weaken the cartilage to the extent that the nucleus pulposus protrudes through it and forms a bulge. This bulge may push against the nerve roots in the spinal canal, causing pain. Rupture or herniation of the disks may be caused by injury or by sudden straining with the spine in an unnatural position (as in improper lifting). The condition can also come on gradually as a result of a progressive deterioration of the disks. Symptoms depend on the location and the extent to which the disk material has been pushed out. Most cases involve the disks between the fourth and fifth lumbar vertebrae or between the fifth lumbar vertebrae and the sacrum. There is severe pain in the lower back and difficulty in walking. The sciatic nerve, which originates in the lower part of the spinal cord, is affected, with resulting pain at the back of the thigh and lower leg. A cough, sneeze, or strain will send the pain along the course of the sciatic nerve to the calf or ankle. When the disks of the cervical vertebrae are affected, severe pain in the back of the neck radiates down the arms to the fingers. Neck movements are restricted. Any neck motion, coughing, sneezing, or straining will accentuate the pain. *See also herniated disk.*

**SLM**

Sound level meter.



**Sloan letter chart**

A chart containing capital letters graded by size in equal logarithmic steps chosen to be of equal difficulty to each other and to the Landolt ring for use at specified distances from the observer for testing visual acuity.

**slop of grain**

See *cross grain*.

**slope**

The tangent to a line or curve at a given point. (Note: Slope is undefined if the tangent to the line is vertical.)

**slope factor**

A plausible upper-bound estimate of the probability of a response per unit intake of a chemical over a lifetime. The slope factor is used to estimate an upper-bound probability of an individual developing cancer as a result of a lifetime of exposure to a particular level of a potential carcinogen.

**slope intercept form**

An equation for a straight line in which the slope and ordinate intercept are variables:

$$y = mx + b$$

where:

$m$  = slope

$b$  = intercept

**slot hood**

A hood provided with a narrow slot(s) leading into a plenum chamber that is under suction to distribute the intake of air along the length of the slot(s). See also *lateral exhaust hood*.

**slot velocity**

Linear flow rate of air through an opening in a slot-type hood.

**slotted mechanical signal**

A mechanically operated signal with an electromagnetic device inserted in its operating connection to provide a means of controlling the signal electrically, as well as mechanically.

**slouched**

Pertaining to a variant standing posture in which the shoulders and upper back are rotated forward, with the neck slightly flexed.

**slough**

Generally non-navigable parts of the river where it runs behind islands and away from the channel (pronounced "slew").

**slow meter response**

The slow response of the sound level meter. The slow dynamic response of the meter must comply with the meter dynamic characteristics specified in the American National Standard Institute (ANSI) Specification for Sound Level Meters.

**slow sand filtration**

Treatment process involving passage of raw water through a bed of sand at low velocity which results in the substantial removal of chemical and biological contaminants.

**slow speed**

*Rail Operations.* A speed not exceeding 20 miles per hour.

**slow wave sleep**

That sleep phase during which delta frequency EEG waves predominate, with little muscle activity and eye movements and regular, slightly lower than the normal awake heart and respiration rates.

**SLSDC**

See *Saint Lawrence Seaway Development Corporation*.

**sludge**

A semisolid residue from any number of air or water treatment processes. Sludge can be a hazardous waste under certain conditions. Also any solid, semisolid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility or any other such waste having similar characteristics and effects.

**slug**

(1) A unit of mass in the English system, equal to that mass whose acceleration by a force of one pound is one foot/sec. (2) A bullet or shot of irregular or oblong shape. (3) A strip of type metal used as a compositor's mark. (4) Any often counterfeited small chunk of metal. (5) Any of various mollusks related to the snail, having an elongated body and a rudimentary shell. (6) The larva of a sawfly or other insect. (7) A heavy blow, as

with the fist or a blunt object. (8) A drink of undiluted liquor.

**slumped**

Pertaining to a near sitting posture in which the shoulders and back are rotated forward, with the neck slightly flexed.

**slurry**

A watery mixture of insoluble matter that results from some pollution control techniques.

**slurry oil**

The name applied to the heavy liquid stream obtained from the bottoms of the fluid catalytic cracking process employed in petroleum processing operations. This material has demonstrated carcinogenic effects to the skin in animal tests.

**SMACNA**

Sheet Metal and Air Conditioning Contractor's National Association.

**small air traffic hub**

A community enplaning from 0.05 to 0.24 percent of the total enplaned passengers in all services and all operations for all communities within the 50 states, the District of Columbia, and other U.S. areas designated by the Federal Aviation Administration.

**small aircraft**

An aircraft of 12,500 pounds or less maximum certificated takeoff weight.



*A "small aircraft" per FAA definition*

**small arms ammunition**

Any shotgun, rifle, pistol, or revolver cartridge, and cartridges for propellant-actuated power devices and industrial guns. Military-type ammunition containing explosive-bursting charges, incendiary, tracer, spotting, or pyrotechnic projectiles are excluded from this definition.

**small arms ammunition primers**

Small percussion-sensitive explosive charges, encased in a cup, used to ignite propellant powder.

**Small Business Administration (SBA)**

The fundamental purposes of the federal SBA are to aid, counsel, assist, and protect the interests of small business; ensure that small business concerns receive a fair proportion of government purchases, contracts, and sub-contracts, as well as of the sales of government property; make loans to small business concerns, state and local development companies, and the victims of floods or other catastrophes, or of certain types of economic injury; license, regulate, and make loans to small business investment companies; improve the management skills of small business

owners, potential owners, and managers; conduct studies of the economic environment; and guarantee leases entered into by small business concerns as well as surety bonds issued to them.

**small certified air carrier**

Air carrier holding a certificate issued under section 401 of the Federal Aviation Act of 1958 and operating aircraft designed to have a maximum seating capacity of 60 or less seats or a maximum payload of 18,000 pounds or less.

**small hose system**

A system of hose ranging in diameter from 5/8 inch (1.6 cm) up to 1 1/2 inch (3.8 cm) which is for the use of employees and which provides a means for the control and extinguishing of incipient stage fires.

**small quantity generators (SQG)**

Defined as those facilities producing less than 1,000 kilograms of hazardous waste per calendar month (kilogram per month), which is the equivalent of 300 gallons or about five 55-gallon drums; note, however, some states define SQGs more narrowly.

**small saphenous vein**

A superficial leg vein extending from the ankle to the popliteal region in the posterior leg.

**small trimming hatch**

A small hatch or opening, pierced in the 'tween-deck or other intermediate deck of a vessel and intended for the trimming of dry bulk cargoes. It does not refer to the large hatchway through which cargo is normally handled.

**small urban area**

Places of 5,000 to 49,999 urban population (except in the case of Maine and New Hampshire) outside of urbanized areas. As a minimum the small urban area includes any place containing an urban population of 5,000 or more as designated by the U.S. Bureau of the Census.

**smallpox**

A highly contagious, often fatal viral disease. Its most noticeable symptom is the appearance of blisters and pustules on the skin. Smallpox has become rare to non-existent in

most industrialized countries because of widespread vaccination against the disease. Smallpox is one of the most contagious diseases known. The virus that causes the disease is present in the nose and throat of the infected person, in blisters on his/her skin, and in any excretions throughout the course of the disease. The incubation period is generally 12 days, although it may vary from 7 to 21 days. Persons travelling to lesser developed countries should ensure that they have been properly vaccinated against this disease prior to departure. The symptoms of smallpox are severe headache, chills, and high fever. Within 3 or 4 days, a rash of small, red pustules appears, first on the face, then the arms, wrists, hands, and legs. A small number of spots appear on the trunk. In a day or two, the spots become blisters and fill with clear fluid. Over the next week, the fluid turns into a yellowish, pus-like substance and begins to dry up, leaving a crust or scab on the skin. These scabs fall off after 3 or 4 weeks, leaving disfiguring pits in the skin, particularly on the face.

**SMCRA**

Surface Mining Control and Reclamation Act of 1977.

**smear**

A preparation for microscopic study, the material being spread thinly and unevenly across the slide with a swab or loop, or with the edge of another slide.

**Smedley hand dynamometer**

A hand-operated mechanical dynamometer with a rotary read-out dial for measuring grip strength.

**smell**

The sense that enables one to perceive odors. The sense of smell depends on the stimulation of sense organs in the nose by small particles carried in inhaled air. It is important not only for the detection of odors, but also for the enjoyment of food. Flavor is a blend of taste and smell. Taste registers only four qualities: salt, sour, bitter, and sweet. Other qualities of flavor depend on smell. The organs of smell are small patches (olfactory) cells in the nasal mucosa. One patch is located in each of the two main compartments of the back of the nose. The olfactory cells are connected to the brain by the first cranial (olfactory) nerve.

Air currents do not flow directly over the patches in breathing; this is why one must sniff to detect a faint odor or to enjoy a fragrance to the fullest. When one sniffs, air currents carrying molecules of odorous chemicals enter special compartments, called olfactory chambers, where the chemicals are dissolved in mucus. There they can act on the organs of smell in much the same way that solutions act on the taste buds of the tongue. The endings of the sensory nerves that detect odors, the olfactory receptors, quickly adapt to an odor and cease to be stimulated by it after a few minutes of full exposure (referred to as a fatigued sense of smell).

**smelter**

A facility that melts or fuses ore, often with an accompanying chemical change, to separate the metal. Emissions are known to cause pollution. *Smelting* is the process involved.

**s/mm<sup>2</sup>**

Structures per square millimeter.

**smog**

Air pollution associated with oxidants present in the atmosphere which, as a result of a temperature inversion under no-wind conditions, is brought extremely close to the Earth's surface. Smog has led to air pollution episodes resulting in serious human illness and death.

**smog front**

The leading edge of a sea breeze that is contaminated with smoke or pollutants. Sometimes called *smoke front*.

**smoke**

Small gas-borne particles that consist mainly of carbon and other combustible materials resulting from incomplete combustion.

**smoke detector**

A device that senses visible or invisible particles of combustion.



*Ceiling-mounted smoke detector (can battery operated or wired to a permanent power source)*

**smoke front**

See *smog front*.

**smoke tube**

A glass tube containing a chemical adsorbed on a solid medium and which emits a smoke-like cloud when air is blown through the tube. It is often used to determine air flow direction/speed and/or to test the facial seal of some respiratory detection devices.

**smokeless propellants**

Solid propellants, commonly caused smokeless powders in the trade, used in small arms ammunition, cannon, rockets, propellant-actuated devices, etc.

**smokestack**

(1) *General*. The vertical structure through which industrial or municipal emissions are vented to atmosphere. (2) *Transit*. Vertical exhaust pipe on side of cab.

**smoking**

The act of drawing into the mouth and puffing out the smoke of tobacco contained in a cigarette, cigar, or pipe. For centuries, tobacco smoking has been suspected of being a health hazard. It is now well-known and firmly established that a close relationship exists between smoking and lung cancer and heart disease. Tobacco smoke contains a number of harmful substances, including poisons such as nicotine, various irritants, and carcinogenic compounds.

**smooth muscle**

A normally involuntary, non-striated muscle tissue which is involved in visceral and other internal bodily movements.

**SMR**

See *standardized mortality ratio*.

**smudge pot**

See *orchard heater*.

**snag**

A stem or trunk of a tree above the surface of the water.

**snag/stump area**

An area, identified as a danger to maritime navigation, containing one or more trunks or stems near the surface of the water.

**snapback method**

See *repetitive timing*.

**snapback timing**

See *repetitive timing*.

**snapping finger syndrome**

A stenosing tenosynovitis of a finger.

**sneak analysis**

See *sneak circuit analysis*.

**sneak circuit analysis**

A system safety analytical technique used to identify and evaluate the different possible ways in which inherent system design characteristics can either permit an undesired function to occur, prevent a desired function from occurring, or adversely affect critical operational timing. Typically associated with analysis of electrical or electronic systems and other energy transfer systems (pneumatic, hydraulic, etc.). Also known as *sneak analysis*.

**sneeze**

An involuntary, sudden, violent, and audible expulsion of air through the mouth and nose.

Sneezing is usually caused by the irritation of sensitive nerve endings in the mucous membrane that lines the nose. Allergies, drafts of cold air, and even bright light can produce sneezing. Sneezing and coughing are similar in that both are reflex actions and are preceded by quick inhalations. However, a cough may also be deliberate, to clear the throat or bronchi. Sneezing and coughing both involve the glottis. The power for a cough is achieved by closing the glottis and holding the air under pressure for a moment, then suddenly forcing it out by action of the diaphragm and of the muscles of the chest wall and abdomen. In a sneeze, the glottis is momentarily closed after air is inhaled and the tongue is pressed against the roof of the mouth. When the glottis is suddenly opened, part of the air goes through the nose and, when the tongue is released, part goes through the mouth. In this way, mucus and other irritants are expelled from the nose.

**Snellen acuity**

A measure of visual acuity, referenced to a Snellen chart at 20 feet, expressed either as a decimal number or as the distance at which a given row of letters capable of being read by the individual being tested subtends 1 minute of arc.

**Snellen chart**

A standardized chart containing rows of letters or numbers of the same size within a row, but of different sizes across rows for measuring visual acuity.

**Snellen test**

A test using a Snellen chart to determine visual acuity.

**snoring**

Breathing during sleep accompanied by harsh sounds. It occurs when inhaled air causes the soft palate to vibrate. Snoring is common among persons who sleep with their mouths open.

**snow**

A freezing or frozen mixture consisting of discrete particles or crystals.

**snow blindness**

A normally temporary visual impairment, possibly accompanied by actinic keratoconjunctivitis, due to reflection of sunlight from surrounding snow. Also referred to as *solar photophthalmia*.

**snow flurries**

Light showers of snow that fall intermittently.

**snow grains**

Precipitation in the form of very small, opaque grains of ice. The solid equivalent of drizzle.

**snow pellets**

White, opaque, approximately round ice particles between 2 and 5 mm in diameter that form in a cloud either from the sticking together of ice crystals or from the process of accretion. Also known as *graupel*.

**snow ripples**

A series of wavelike formations on a snow surface, at right angles to the direction of the wind.

**snow rollers**

A cylindrical spiral of snow shaped somewhat like a child's muff and produced by the wind.

**snow squall**

An intermittent heavy shower of snow that greatly reduces visibility.

**snowball survey**

The gathering of initial response on some issue from a selected sample of people, followed by a presentation of those responses to a second, different sample for revision, then a review by the first group, and finally a revision by the entire group.

**snowflake**

An aggregate of ice crystals that falls from a cloud.

**snowmobile**

A motorized vehicle solely designed to operate on snow or ice.

**SNR**

See *signal-to-noise ratio*.

**snub nose**

See *cab over*.

**snubber**

A mechanical device for increasing the stiffness of an elastic system when the displacement becomes larger than some specified value.

**SNUN**

Significant new use notice. See *significant new use rule*.

**SNUR**

See *significant new use rule*.

**soap**

A fatty acid salt, usually with a hydrocarbon chain of about 12 units.

**SOCs**

See *synthetic organic chemicals*.

**Society of Toxicology (SOT)**

A professional association of toxicologists who have carried out original toxicity investigations, published findings, and have a continuing professional interest in the field.

**sociocucis**

Increase in hearing-threshold level resulting from noise exposures in the social environment, exclusive of occupational-noise exposure, physiologic changes with age, or otologic disease.

**sociology**

The study of interpersonal and group behavior, and the influences of society and culture on such behavior.

**SOCMA**

Synthetic Organic Chemical Manufacturers Association.

**sodium**

A chemical element, atomic number 11, atomic weight 22.990, symbol Na.

**sodoku**

A relapsing type of infection due to *Spirillum minus*, an organism transmitted by the bite of an infected rat.

**soft detergents**

Cleaning agents that break down in nature.

**soft goods**

The nonmetal materials in a pressure system that are used to form a seal for metal-to-metal contact or between other hard surfaces.

**soft light**

Any type of luminaire of the diffuse illumination from a luminaire which gives shadows without sharp definition.

**soft palate**

The posterior extension from the hard palate, consisting of muscles and a covering mucous membrane. See also *palatine velum*.

**soft tree**

A system safety technique used to evaluate a single loss event and/or the effect of simulta-



neous failures with a software system on that single loss, or "top" event. Also known as *software fault tree analysis*.

**soft water**

Any water that is not "hard," i.e., does not contain a significant amount of dissolved minerals such as salts containing calcium or magnesium.

**software**

The set of computer programs (instructions) that tell the hardware which tasks to perform.

**software fault tree analysis**

See *soft tree*.

**software hazard analysis**

A system safety analytical technique whose function is to evaluate potential faults in both operating system and applications software requirements, codes, and programs as they may affect overall system operation.

**soil adsorption field**

A subsurface area containing a trench or bed with clean stones and a system of distribution piping through which treated sewage may seep into the surrounding soil for further treatment and disposal.

**soil and groundwater analysis**

Tests used to determine the presence of superficial or subsurface contamination and concentration levels; may involve soil borings and installations of test pits and/or observation wells.

**soil conditioner**

An organic material like humus or compost that helps soil absorb water, build a bacterial community, and distribute nutrients and minerals.

**soil gas**

(1) Gaseous elements and compounds that occur in the small spaces between particles of the earth and soil. Such gases can move through or leave the soil or rock, depending on changes in pressure. (2) Gases that enter a building from the surrounding ground (e.g., radon, volatile organics, pesticides).

**soil gas sampling**

A procedure used to locate oil and gas deposits and which has been adapted for use in the hazardous waste field where volatile fuels or solvents are a concern. Passive and grab sampling techniques are employed. The for-

mer involves injecting a solvent into the soil to absorb the volatiles, and the latter involves the withdrawal of air vapors through a probe. Analysis of samples is by gas chromatography or with a total gas analyzer.

**soil vapor surveys**

Surveys using gas chromatography equipment to map potential soil and groundwater contamination.

**solar constant**

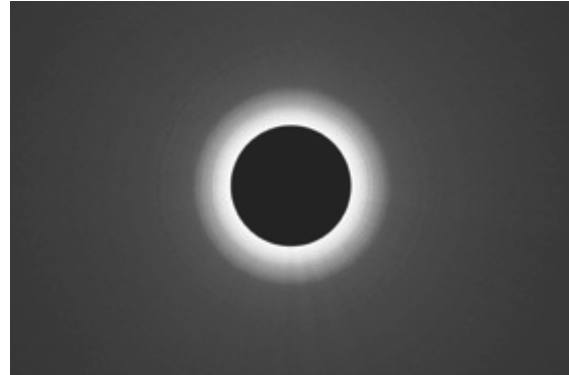
The rate at which solar energy is received on a surface at the outer edge of the atmosphere perpendicular to the sun's rays when the earth is at a mean distance from the sun. The value of the solar constant is about two calories per square centimeter per minute.

**solar corona**

The thin, ionized gas of the outermost region of the sun's atmosphere.

**solar eclipse**

The apparent dimming or elimination of the sun's light caused by the passage of the moon between the sun and the observer.



*A full solar eclipse*

**solar energy**

The radiant energy of the sun, which can be converted into other forms of energy, such as heat or electricity.

**solar flare**

A rapid eruption from the sun's surface that emits high energy radiation and energized charged particles. Sometimes referred to as *prominence*.

**solar particle event (SPE)**

The eruption of a large flare on the sun which results in radiation consisting of a large number of high energy protons and alpha particles.

**solar photophthalmia**

See *snow blindness*.

**solar plexus**

A network of ganglia and nerves in the center of the abdomen. It is part of the autonomic nervous system and is important in the control of the function of the liver, stomach, kidneys, and adrenal glands. A blow to it may knock a person out or cause great pain because the organs are momentarily disturbed. Although the plexus recovers quickly, the effects on the body as a whole may last longer.

**solar retinopathy**

Damage to eye retinal tissue from looking directly at the sun without eye protection.

**solar wind**

An outflow of charged particles from the sun that escapes the sun's outer atmosphere at high speed. Also referred to as *plasma*.

**solder**

A metallic compound used to seal the joints between pipes. Until recently, most solder contained 50 percent lead.

**sole proprietorship**

A form of business in which one person owns all the assets of the business in contrast to a partnership, trust, or corporation. The sole proprietor is solely liable for all the debts of the business.

**sole source aquifer**

An aquifer that supplies 50 percent or more of the drinking water of an area.

**solid**

A material which has a vertical flow of two inches (50 mm) or less within a three-minute period, or a separation of less than one gram (18) of liquid. This determination is usually made in accordance with the procedures specified in American Society for Testing and Materials (ASTM) D 4359, "Standard Test Method for Determining Whether a Material is a Liquid or Solid."

**solid angle**

That part of the space bounded by a moving straight line (the generator) issuing from a single point (the vertex) and moving to all points on an arbitrary closed curve. It characterizes the angle of "seeing" from which this curve is "seen." The basic unit of measure for solid angles is the *steradian*. 1.0 steradian is the solid angle (i.e., the area) cut out

of a unit sphere as its vertex and producing *plane angle* (in any plane through this vertex) of 1.0 radian (i.e., the "cone" with its vertex angle = 1.0 radian. Solid angles are dimensionless quantities. See also *plane angle and length*. They are defined as

$$\frac{\text{AREA}}{\text{AREA}} = \frac{[(\text{LENGTH})^2]}{[(\text{LENGTH})^2]}$$

**solid bluff reef**

A shallow reach with deep water below it, not too much current, and in which the sand is fairly well-packed.

**solid model**

A three-dimensional model in which the edges, surfaces, and volume of an object are represented.

**solid sorbent**

A solid-type sorbent material, such as activated charcoal, silica gel, porous polymer, etc. that is used to collect contaminants in air drawn through a tube containing the sorbent.

**solid waste**

As defined by RCRA, any liquid, containerized gas, non-liquid, or nonsoluble materials ranging from municipal garbage to industrial wastes that contain simple or complex, sometimes hazardous substances.

**solid waste disposal**

The final placement of refuse that is not salvaged or recycled.

**solid waste facilities/landfill sites (SWF/LS)**

Type of records that typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps.

**solid waste management**

Under the Federal Solid Waste Disposal Act: The systematic administration of activities which provide for the collection, source separation, storage, transportation, transfer, processing, treatment, and disposal of solid waste.

**solid waste management facility**

According to the Federal Solid Waste Disposal Act: a) any resource recovery system or component thereof; b) any system, pro-gram, or facility for resource conservation; and c)

any facility for the collection, source separation, storage, transportation, transfer, processing, treatment or disposal of solid wastes, including hazardous wastes, whether such facility is associated with facilities generating such wastes or otherwise.

**solidification and stabilization**

Removal of wastewater from a waste or changing it chemically to make the waste less permeable and susceptible to transport by water.

**solubility**

The ability of a substance to blend uniformly (i.e., dissolve) with another substance.

**soluble**

Capable of being dissolved.

**solute**

A substance dissolved in another substance or the substance that is dissolved in a solvent.

**solute effect**

The dissolving of hygroscopic particles, such as salt, in pure water thus reducing the relative humidity required for the onset of condensation.

**solution**

(1) A mixture in which components lose their identity and are uniformly dispersed. All solutions are composed of a solvent (water or other fluid) and the substance dissolved, called the "solute." (2) Any homogeneous liquid mixture of two or more chemical compounds or elements that will not undergo any segregation under conditions normal to transportation.

**solvent**

Substance (usually liquid) capable of dissolving or dispersing one or more other substances.

**solvent-reagent blank response**

The gross instrument response attributable to reagents and solvents used in preparing working standards for use in analytical procedures.

**somatic**

Pertaining to or characteristic of body tissue other than reproductive cells.

**somatic cell**

A body cell usually with two sets of chromosomes.

**somatogram**

A graphed profile consisting of girths at several body locations for classifying fat patterning, muscular distribution, or other body proportions.

**somatotype**

(1) To classify individuals into particular categories by body characteristics. (2) Any classification within a system describing individuals according to body characteristics. Used historically as an attempt to correlate body type or structure with human character or personality traits. *See also Heath-Carter somatotype, Sheldon somatotype, and Kretschmer somatotype.*

**somnolence**

Unnatural drowsiness.

**sonar**

A sound system, most commonly used under water, for detecting, locating, or communicating with other objects. Originally an acronym for *sound navigation and ranging*.

**son**

A subjective unit of loudness equal to the loudness of a pure tone having a frequency of 1000 Hz at 40 dB above the listener's hearing threshold.

**sonics**

The use of sound in measurement, control, or processing.

**sonogram**

An image resulting from sonography.

**sonography**

The use of sound energy and its reflections to image structures. Also referred to as *echography*.

**sonometer**

An instrument for measuring hearing acuity (an outdated term).

**sonorant**

A class of consonants produced by narrowing the vocal tract slightly, but not enough to cause turbulence.

**sooging**

(*slang*). River term used when scrubbing any part of the boat.

**soot**

(1) Carbon dust formed by incomplete combustion. (2) Particulate formed from the incomplete combustion of carbonaceous matter and consisting of carbon combined with air.

**SOP**

Standard operating procedure.

**sophisticated surface water sampling program**

Consists of numerous samples taken at several different depths and the testing of such physical parameters as pH, conductivity, presence of dissolved oxygen, and temperature.

**sorbent**

A general term for the solid or liquid materials that are employed to adsorb or absorb chemicals from air being passed through a bed or column of the material. Sorbents are used in respiratory protective equipment, as well as in sampling devices (e.g., activated charcoal sampling tubes).

**sorbent tube**

A glass tube containing a sorbent material. Used in air monitoring to determine workers' exposure to vapors or gases.

**sorption**

The action of soaking up or attracting substances. A process used in many pollution control systems.

**sortie**

*U.S. Coast Guard.* Action of a unit's resource in rendering assistance, or use of personnel on Communication/Harbor checks. Each action comprises one sortie.

**SOT**

See *Society of Toxicology*.

**sound**

(1) Any pressure variation in air, water, or other media that the human ear can detect. Sound is characterized by both frequency (pitch) and pressure (intensity). (2) Any mechanical vibration which normally results in an auditory sensation. (3) A mechanical oscillation in pressure, stress, particle displacement, or other similar characteristics within a medium allowing internal forces such as elasticity or viscosity. (4) The root-mean-square value of the pressure changes above and below atmospheric pressure, normally described in decibels referenced to  $2 \times 10^{-5}$  newtons/m<sup>2</sup>. Sound pressure level can be measured in

dynes per square centimeter, microbars, or pascals.

**sound absorption**

The change of sound energy into some other form of energy, such as heat, in passing through a material or striking a surface.

**sound analyzer**

A device for measuring sound pressure level as a function of frequency.

**sound energy flux density**

See *sound intensity*.

**sound field**

A region containing sound waves.

**sound intensity**

The average rate at which sound energy is transmitted through a unit area normal to the direction of sound propagation, measured in joules per square meter per second (J/m<sup>2</sup>/sec) or in decibels referenced to 10<sup>-12</sup> watts/m<sup>2</sup>.

**sound level**

The level, in decibels, measured by instrumentation which satisfies the requirements of the American National Standard Institute (ANSI) Specification for Sound Level Meters. See also *noise level*.

**sound level contour**

Lines drawn on a plot plan of a facility at positions of equal noise level.

**sound level meter**

An instrument used for measuring sound pressure levels in decibels, referenced to 0.0002 microbars. Readings can also be made in specific octave bands ranging from 75 Hz to 10,000 Hz.

**sound localization**

The ability to identify the direction from which a sound source is emitting relative to the observer.

**sound power**

The total sound energy radiated by the source per unit time, measured in decibels and referenced to 10<sup>-12</sup> watt.

**sound pressure**

See *effective sound pressure*.

**sound pressure level (SPL)**

The level, in decibels, of a sound calculated as 20 times the common logarithm of the ratio of a sound pressure to the reference sound pres-

sure of 20 micropascals. The reference pressure is  $2 \times 10^{-4}$  microbar which is equivalent to 20 micronewtons per meter squared.

**sound protective helmet**

Any piece of headgear which both cushions against impact and attenuates noise.

**sound radiation**

The conduction of acoustic energy through a solid, liquid, or gaseous medium.

**sound transmission class**

A single number rating representing a measure of the ability of a material to absorb sound or block sound transmission from one region to another.

**sound velocity**

The speed of propagation of a sound wave through a medium. The velocity of sound is 1130 ft/s in air, 4700 ft/s in water, 13,000 ft/s in wood, and 16,500 ft/s in steel.

**sounding**

An upper-air observation, such as a radiosonde observation.

**sounding pole**

*Maritime Navigation.* A pole generally 20 feet long, lightweight, and painted with alternating red, white, and black colors at one foot intervals to permit easy reading of water depths. *See also pike pole.*

**soundproof room**

A room or chamber which insulates to some stated level against external noise penetration.

**sour crude oil**

Crude oil that contains an appreciable quantity of hydrogen sulfide or other acid gas.

**sour gas**

A natural gas or other combustible gas which contains odor-causing sulfur compounds, such as hydrogen sulfide, mercaptans, etc.

**source**

(1) *Radiation.* A discrete amount of radioactive material or radiation-producing equipment. The term usually refers to radioactive material specifically packaged for scientific or industrial use. (2) *Environmental.* The originating point, location, chemical, element, substance, etc. of some type of pollution or contaminating agent(s). Also, any area where a hazardous substance has been deposited, stored, disposed, or placed, plus those soils

that have become contaminated from migration of a hazardous substance. Sources do not include those volumes of air, groundwater, surface water, or surface water sediments that have become contaminated by migration. Exception: In the case of either groundwater plume with no identified source or contaminated surface water sediments with no identified source, the plume or contaminated sediments may be considered a source.

**source material**

Uranium, thorium, or any other material which is determined by the Atomic Energy Commission under the Atomic Energy Act of 1954 to be source material. Also, ores containing one or more of the foregoing materials, in such concentration as the Commission may by regulation determine from time to time.

**source reduction**

Under the Federal Pollution Prevention Act of 1990: The practice of reducing the amount of waste generated at its source of production. In HSWA, any activity or treatment that reduces or eliminates the generation of a hazardous waste within a process. Also, any practice which reduces the amount of any hazardous substance, pollutant, or contaminant entering any waste stream or otherwise released into the environment (including fugitive emissions) prior to recycling, treatment, or disposal; and reduces the hazards to public health and the environment associated with the release of such substances, pollutants, or contaminants.

**source region**

A region where air masses originate and acquire their properties of temperature and moisture.

**South Atlantic Anomaly**

A region over the south Atlantic Ocean where high radiation levels are encountered at lower altitude than elsewhere for earth-orbiting vehicles.

**southern lights**

The aurora australis. *See aurora.*

**SP**

*See static pressure.*

## space

(1) The region surrounding a specified point or individual on earth. (2) The universe outside the earth's atmosphere. (3) A delimited area. (4) An actual or potential cavity of the body.

### space adaptation syndrome (SAS)

A temporary disability encountered early in a spaceflight by some astronauts/cosmonauts which resembles motion sickness on earth, having symptoms including nausea, dizziness, and headache. Also referred to commonly as *space sickness* or *space motion sickness*.

### space planning

The development and/or use of information regarding operations for a specific location in determining a better or optimum use of the area or volume available for those functions.

### Space Transportation System (STS)

The Space Transportation System is the primary vehicle of the United States' manned spaceflight program used to transport astronauts to low earth orbit for the purpose of scientific and medical experimentation. It is also used to transport payloads (satellites, experiments, etc.), as well as supplies to the orbiting space station. First launch of this system was April 12, 1981 from the Kennedy Space Center in Florida. Launches have continued since then with a frequency between two and ten per year. A hold on all STS launches was instituted following the explosion of the shuttle Challenger during launch in January 1986 which resulted in the loss of the seven crew members. After an extensive investigation by a Presidential Commission and subsequent improvements to the STS as well as program and procedure operations, launches resumed on September 29, 1988. Missions typically average seven or more days, depending upon the specific objectives for a given launch. The STS consists of three major or primary components: the orbiter vehicle (commonly referred to as the shuttle), the twin solid rocket boosters (SRBs) which provide the majority of the propulsion and break-away thrust required during liftoff, and the external tank (ET) which supplies the propellants (liquid oxygen as oxidizer and liquid hydrogen as fuel) which power the orbiter's main engines during liftoff only. During launch, the solid rocket boosters expend nearly all their fuel com-

plement within the first 120 seconds after liftoff. They are the jettisoned from the STS and fall back to earth. The ET is nearly empty after approximately eight minutes of flight. By this time the orbiter is practically in orbit configuration. The ET is also jettisoned from the STS. Following the space mission the orbiter vehicle returns to earth, landing like an aircraft (a powerless glider) to be refurbished and used again for another mission. Both the solid rocket boosters are also retrieved from the Atlantic Ocean, returned to the manufacturer, and refurbished for reuse during a subsequent mission. The external tank falls into the Indian Ocean and is not retrieved. See also [shuttle \(2\)](#).



*An STS launch from Kennedy Space Center in Florida*

### space vehicle

An artificial body operating in outer space (beyond the Earth's atmosphere.)

### spacecraft maximum allowable concentration (SMAC)

A maximum concentration level of certain substances permitted by NASA in manned spacecraft.

### spaced practice

See *distributed practice*.



**span**

(1) *Instrumentation*. The algebraic difference between the upper and lower values of the range over which an instrument produces reliable results. It is also expressed as the maximum value observable if the minimum is zero. *See also gain*. (2) *Anthropometry*. The horizontal linear distance between the fleshy tips of the right and left middle (or longest) fingers. Measured with the individual's arms maximally extended laterally while standing erect and the body weight equally distributed on both feet.

**span akimbo**

The horizontal linear distance between the most lateral points of the two elbows. Measured with the individual standing erect and the elbows flexed sufficiently to permit the following position: the forearms held horizontal at chest level with the palms down, the fingers extended and adducted, the tips of the middle fingers of each hand touching, and thumbs touching the chest. Also referred to as *akimbo span*.

**span drift**

*Instrumentation*. The change in the indicated response of an instrument over a specific time period of continuous operation due to causes other than a change in the concentration of the span gas. This drift can be positive or negative and may vary in magnitude between calibration periods.

**span gas**

A gas of known concentration that is used to calibrate or check the response of an instrument or analyzer.

**spar her out**

*Maritime Operations*. Usually to hold a boat off bank using a heavy timber.

**spare parts, supplies and other-net**

Flight equipment replacement parts of a type recurrently expended and replaced rather than repaired or reused, supplies such as unissued fuel inventories and unissued materials and supplies held in stock, prepaid items, net investments in direct financing and sales type leases and other current assets. Spare parts may be reduced by an allowance for obsolescence to provide for losses in value.

**spare vehicles**

*Transit*. The revenue vehicles available to the transit agency to accommodate routine and heavy maintenance requirements, as well as unexpected vehicle breakdowns or accidents, while preserving scheduled service operations.

**spark**

The rapid release of electrical or impact energy that is visible in the form of light.

**spasm**

(1) A sudden, involuntary contraction of a muscle or group of muscles. (2) A sudden but transitory constriction of a passage, canal, or orifice. Spasms usually occur when the nerve-supplying muscles are irritated, and are commonly accompanied by pain. Occasionally a spasm may occur in a blood vessel, and then it is called *vasospasm*.

**spasmodic dysphonia**

A spasm disorder of the laryngeal muscles which results in an inability to produce speech sounds.

**spasticity**

A movement disorder originating in the central nervous system characterized by muscle hypertonia and a sudden increased muscle resistance to passive stretching, usually followed by relaxation.

**spatial correspondence**

A condition in which the actuator(s) on a robotic device mimic the motion of the operator's controls.

**spatial frequency**

The reciprocal of the spacing between equally spaced elements of a repeating visual pattern.

**spatial orientation**

An awareness and ability to express one's position and location in relation to other objects.

**spatial perception**

The ability to acquire information about the direction, distance, form, and size of physical objects in the visual environment.

**spatial summation**

The additive effect of signals from different neurons acting to cause a greater effect than would be achievable by a single neuron.

**spatio-temporal anthropometry**

The changing of mass distribution, surface area, and other measures over time, within an individual.

**SPCC**

See *spill prevention control and countermeasures plan*.

**SPE**

See *solar particle event*.

**speaker identification**

The ability of a system or individual to distinguish a particular person's voice, whether spoken directly or synthesized.

**speaker verification**

The ability of a system to correctly decide through word or speech recognition techniques whether or not a speaker is who he/she claims to be; the process of making such a decision.

**Spearman rank-order correlation coefficient**

See *rho*.

**Spearman rank-order verification**

A significance test for the correlation of two variables based on differences in rank-ordered data.

**special analytical services**

Nonstandardized analyses conducted under the CLP to meet user requirements that cannot be met using RAS, such as shorter analytical turnaround time, lower detection limits, and analysis of nonstandard matrices or non-TCL compounds.

**special damages**

Those which are the actual, but not the necessary, result of the injury complained of, and which, in fact, follow it as a natural and proximate consequence in the particular case, that is, by reason of special circumstances or conditions. These are damages that do not arise as a result of the wrongful act itself, but depend on the circumstance peculiar to the infliction of each respective injury. In contract law, these are damages not contemplated at the time of the making of the contract. To be recoverable, they must flow directly and immediately from the breach of contract, and must be reasonably foreseeable. Special damages must be specially pleaded and proved.

**special emphasis inspection**

An OSHA inspection with focus on a particular industry (such as construction) or a particular type of work common to that industry (such as working at heights) where hazards are known to be common.

**special fuels**

Consist primarily of diesel fuel with a small amount of liquefied petroleum gas, as defined by the Federal Highway Administration.

**special industrial explosive materials**

Specifically shaped materials and sheet forms and various other extrusions, pellets, and packages of high explosives, which include dynamite, trinitrotoluene (TNT), pentaerythritol tetranitrate (PETN), hexahydro-1,2,5-trinitro-*s*-triazine (RDX), and other similar compounds used for high energy-rate forming, expanding, and shaping in metal fabrication, and for dismemberment and quick reduction of scrap metal.

**special nuclear material**

Refers to plutonium, uranium-233, uranium containing more than the natural abundance of U-235, or any material that has been enriched with any of the foregoing substances.

**special permission**

The written consent of the authority having jurisdiction (an OSHA term).

**special permit**

An approval granted by a local board under zoning to engage in a land use on written conditions or terms.

**special purpose ladder**

A portable ladder which represents either a modification of a combination of design or construction features in one of the general-purpose types of ladders to adapt the ladder to special of specific uses.

**special purpose terminal**

A specialized terminal designed to handle one type of commodity. It is a transfer facility with little or no manufacturing, although it might include lending, separating, and similar processing activities.

**special purpose vehicle**

A motor vehicle commercially designed for some purpose other than the transportation of personnel, supplies, or equipment. This definition excludes any motor vehicle designed for transport and modified locally as an expe-

dient for meeting special needs, e.g., a pickup with a snowplow blade attached.

**special review**

Formerly known as *rebuttable presumption against registration (RPAR)*, this is the regulatory process through which existing pesticides suspected of posing unreasonable risks to human health, non-target organisms, or the environment are referred for review by EPA. The review requires an intensive risk/benefit analysis with opportunity for public comment. If the risk of any use of a pesticide is found to outweigh social and economic benefits, regulatory actions ranging from label revisions and use restriction to cancellation or suspended registration can be initiated.

**special use airspace**

Airspace of defined dimension identified by an area on the surface of the earth wherein activities must be confined because of their nature and/or where limitations may be imposed on aircraft operations that are not a part of those activities.

**special use permit**

A permitted exception to a zoning ordinance (e.g., church, hospital, etc.). A special use permit allows a property owner to use his/her property in a way which the zoning regulations expressly permit under the conditions specified in the regulations themselves.

**special use zone**

An area where distinctive types of shipping activities occur.

**special vehicle**

Consists of the following types of vehicles: snowmobile, farm equipment other than trucks, dune buggy or swamp buggy, construction equipment other than trucks, ambulance, large limousine, self-propelled camper and motor home, fire truck, other special vehicles.

**special visual flight rules conditions**

Meteorological conditions that are less than those required for basic visual flight rules (VFR), flight in controlled airspace, and in which some aircraft are permitted flight under visual flight rules.

**special visual flight rules operations**

Aircraft operating in accordance with clearances within controlled airspace in meteorological conditions less than the basic visual flight rules (VFR) weather minimum. Such operations must be requested by the pilot and approved by ATC.

**special warehousing and storage**

Establishments primarily engaged in the warehousing and storage of special products, not elsewhere classified, such as household goods, automobiles (dead storage only), furs (for the trade), textiles, whiskey, and goods at foreign trade zones.

**specialist**

- (1) *General*. One who is particularly skilled.
- (2) *Aviation*. The internal individual or group who provides service through the National Air Space (NAS) (e.g., controllers, engineers, maintenance and management personnel).
- (3) *Medicine*. A physician who has studied extensively and limits his/her practice to a certain branch of medicine.

**specialization**

The concentration of effort, skills, and/or resources within a narrow scope of activity.

**specialized carrier**

A trucking company franchised to transport articles which, because size, shape, weight, or other inherent characteristics, require special equipment for loading, unloading or transporting.

**specialty ship (liquefied petroleum gas and/or liquefied natural gas)**

A ship designed specifically to carry liquefied gases.

**species**

- (1) Any subspecies of fish or wildlife or plants, and any distinct population segment of any species of vertebrate fish or wildlife which interbreeds when mature.
- (2) A reproductively isolated aggregate of interbreeding populations of organisms.

**specific absorption rate**

The absorption of radio frequency or microwave radiation in watts per kilogram (W/kg) at specific frequencies. Specific Acceleration Power: Measured in watts per kilogram. Acceleration power is divided by the battery

system weight. Weight must include the total battery system.

**specific acceleration power**

Measured in watts per kilogram. Acceleration power is divided by the battery system weight. Weight must include the total battery system.

**specific activity**

*Ionizing Radiation.* Activity of a given radionuclide per unit mass (e.g., curies per gram) of the specific material.

**specific energy**

Measured in watt hours per kilogram. The rated energy capacity of the battery divided by the total battery system weight.

**specific gravity**

The ratio of the mass of a unit volume of a substance to the mass of the same volume of a standard substance at a standard temperature. Water at 39.2°F is the standard substance usually referred to.

**specific heat**

The amount of heat required to raise a unit weight of a substance one degree of temperature at constant pressure.

**specific humidity**

The ratio of the mass of water vapor in a given parcel to the total mass of air in the parcel.

**specific intent**

The mental purpose to accomplish a specific act prohibited by law.

**specific license**

*Ionizing Radiation.* A license that is issued by the NRC or Agreement State to a company/organization to possess and use a radioactive material(s) after an application has been submitted and approved and specific requirements have been met.

**specific public transportation**

Transportation by bus, rail, or any other conveyance (other than aircraft) provided by a private entity to the general public, with general or special service (including charter service) on a regular and continuing basis.

**specific volume**

The volume occupied by a unit of air, such as cubic feet per pound.

**specification**

A clear and accurate description of the requirements for materials, products, services, etc. specifying the minimums of performance necessary for acceptability.

**specification standard**

An OSHA standard that essentially tells the employer *how* compliance is to be achieved. It may establish levels of exposure or particulars on operating certain types of equipment.

**specificity**

(1) *General.* The percentage of variance accounted for by other than the independent variable being considered. (2) *Instrumentation.* The ability of an instrument to accurately detect a substance in the presence of others.

**specified minimum yield strength**

The minimum yield strength, expressed in pounds per square inch, prescribed by the specification under which the material is purchased from the manufacturer. *See also stress level.*

**spectra**

(1) *Acoustics.* The distribution of noise energy according to frequency. Also referred to as an *audio-frequency spectrum*. (2) *Electromagnetic Radiation.* The distribution of energy from a radiant source (e.g., visible light) according to its wavelength or frequency.

**spectral analysis**

The breakdown or decomposition of a series into frequency bands. Also called *spectrum analyses*.

**spectral density**

*See power spectral density.*

**spectral fluorescent radiance facto ( $\beta_F$ )**

The ratio of the radiance from a fluorescent sample to that produced by an identically irradiated perfect reflecting diffuser for a specified wavelength.

**spectral luminous efficiency**

The value of the ratio of the relative effectiveness of the conversion of light in the retina of a second wavelength of light to that of a reference wavelength which yields the great-

est effectiveness. Also referred to as relative luminosity and relative luminosity factor.

**spectral luminous efficiency function**

A mathematical function or graphical curve describing the relative sensitivity of the eye to various wavelengths of light. Also known as *eye sensitivity curve*, *spectral sensitivity*, *CIE Standard Observer response curve*, *luminous efficiency function*, and *luminosity function*. See also *photopic spectral luminous efficiency function*, *scotopic spectral luminous efficiency function*.

**spectral reflected radiance factor ( $\beta_R$ )**

The ratio of the radiance produced by the reflection from a sample to that produced by an identically irradiated perfect reflecting diffuser for a specified wavelength.

**spectral sensitivity**

See *spectral luminous efficiency function*.

**spectral tristimulus value**

See *tristimulus value*.

**spectral uncertainty**

As pertains to noise abatement programs, the possible variation in exposure to the noise spectra in the workplace.

**spectrogram**

A graphic record of the power spectral density.

**spectrograph**

(1) Voice print analysis is a method of identification based on the comparison of graphic representations or *spectrograms* made of human voices. This method utilizes the spectrograph which separates the sound of the human voice into the three component elements of time, frequency, and intensity. Using a series of lines or bars, the machine plots the variables across electronically sensitive paper and the result is a spectrogram of the acoustical signal of the speaker, with the horizontal axis representing the time lapse, the vertical axis indicating frequency, and the thickness of the lines disclosing the intensity of the voice. (2) An analytical instrument used to photograph light spectra.

**spectrometer**

An optical instrument for measurement of the wavelengths of a light or for measurement of the radiant intensities of light at selected wavelengths.

**spectrophotometer**

Instrument used to determine the distribution of energy within the spectrum of luminous radiation.

**spectrophotometric curve**

A graphical plot or mathematical function of the amount of light emitted, reflected, or transmitted by an object at all wavelengths within the visible spectrum.

**spectrophotometry**

The selective absorption, by aqueous and other solutions, of definite wavelengths of light in the ultraviolet and visible regions of the electromagnetic spectrum as a means of determining the concentration of a substance present in the solution.

**spectroscope**

Instrument employed for observing, resolving, and recording the distribution of energy emitted by a source exposed to radiant energy.

**spectrum**

(1) *Electromagnetic Radiation*. The series of images resulting from the refraction of electromagnetic radiation (e.g., light, x-rays) and their arrangement according to frequency or wavelength. (2) *Medicine*. Range of activity, as an antibiotic, or of manifestations, as of a disease. (3) *Acoustics*. A continuous range of sound components, within which waves have some specified common characteristic, such as frequency, amplitude, or phase.

**spectrum analysis**

See *spectral analysis*.

**spectrum colors**

Those colors normally produced from the decomposition of white light by a prism, generally red, orange, yellow, green, blue, and violet.

**spectrum level**

See *power spectral density*.

**spectrum locus**

That slanted, inverted-U-shaped boundary line on a chromaticity diagram on which all the colors within the visible region of the electromagnetic spectrum are located.

**specular**

Having a highly reflective finish for light or sound.

**specular angle**

The planar angle between a specular reflected ray of light and the perpendicular to a surface from which the reflection originates.

**specular reflectance**

The value of the ratio of the departing flux from a surface due to specular reflection to the incident flux.

**specular reflection**

A reflection in which electromagnetic or other radiation travels in a specific direction and the specular angle is numerically equal to the angle of incidence.

**specular surface**

A surface providing primarily specular reflections.

**specular transmission**

The passing of an incident energy flux through a medium without diffusion. Also called *regular transmission*.

**specular transmittance**

The value of the ratio of that specularly transmitted flux having passed through a medium to the incident flux.

**specularly reflected light excluded (SPEX)**

A light and/or color measurement condition involving the use of gloss traps to eliminate specularly reflected light.

**specularly reflected light included (SPINC)**

A light and/or color measurement condition in which specularly reflected light is not eliminated.

**speculative damages**

Prospective or anticipated damages from the same acts or facts constituting the present cause of action, but which depend upon future developments which are contingent, conjectural, or improbable.

**speech**

A series of meaningful sounds produced by air flow through various structures either a) in the head, neck, and upper torso for human-generated speech, or b) through various physical cavities for artificial speech. The voice originates in the larynx, which is in the upper end of the air passage to the lungs and is located behind the thyroid cartilage. The larynx, in cooperation with the mouth, throat, trachea, and lungs, works on the same principle as an organ or an oboe, in which air is

forced over a thin reed to produce sound. The vocal cords, two reed-like bands, are attached at one end to the wall of the larynx behind the Adam's apple; the other ends are attached to movable cartilages. When the voice is not being used, muscles move these cartilages outward and hold the vocal cords against the sides of the larynx so that breathing is not obstructed. When one starts to speak, sing, grunt, or shout, the ends of the vocal cords connected to the cartilages are brought across the larynx, so that they partly obstruct it. As air is forced through, the cords vibrate, producing sound waves, the voice.

**speech articulation index (AI)**

A quantitative measure of speech intelligibility in the presence of background noise, ranging from 0 to 1 for impossible voice communication to excellent voice communication, respectively. More commonly referred to as *articulation index*.

**speech clarity**

The ability to convey spoken verbal information clearly such that an average listener will understand what is being said.

**speech compression**

Any form of reduction in the time of bandwidth required to convey essentially the same amount of information in speech. May include a modulation technique for transmitting over a narrower frequency band, reduction in redundancy, or reduction in the interval between words.

**speech enhancement unit (SEU)**

A real-time unit for eliminating commonly found communication channel interference with only minor degrading of the speech signal itself.

**speech frequency band**

Those frequencies generally between 200 Hz and 4000 Hz, which are predominant in human speech.

**speech hearing**

The ability to perceive and comprehend human speech.

**speech intelligibility**

Those characteristics or combinations of emitted speech sounds which enable the normal listener to comprehend what is being spoken.



**speech intelligibility score**

The percentage of spoken material which is understood by the listener.

**speech interference level (SIL)**

The average, in decibels, of the sound pressure levels of a noise in the three octave bands of center frequency 500, 1000, and 2000 hertz.

**speech perception test**

An examination which measures hearing acuity by the administration of a standard list of words with performance evaluated against the average performance of persons with normal hearing.

**speech quality**

A subjective judgement regarding the overall naturalness or acceptability of spoken words and the ability to recognize the speaker from the voice cues alone.

**speech quality scale**

A 5-point Likert scale used for rating the quality of speech, ranging from 1 (unsatisfactory) to 5 (excellent).

**speech reception threshold (SRT)**

The masking noise level which results in 50% correct responses of presented words or sentences.

**speech recognition**

The use of a computer or other device to compare the syntax, semantics, and spectra of more than just a few spoken words, from more than one person, with those algorithms and spectra of speech sounds in memory to perform a match. Also referred to as *continuous speech recognition*.

**speech synthesis**

The generation of meaningful speech sounds through the use of a computer or other equipment using previously coded data.

**speech transmission index (STI)**

A number ranging from 0 to 1 which represents the quality of a speech communication channel, based on dynamically determined measures of the signal-to-noise ratio for speech in a number of frequency bands.

**speed**

(1) The rate at which something is accomplished or an object or control moved. (2) The magnitude aspect of the velocity vector.

**speed attainable in 1 mile**

The speed attainable by accelerating at maximum rate from a standing start for 1 mile, on a level surface.

**speed attainable in 2 miles**

The speed attainable by accelerating at maximum rate from a standing start for 2 miles, on a level surface.

**speed of closure**

See *rate of closure*.

**speed of sound**

The speed that sound travels in air, equal to 1178 feet per second at 78°F (25.5°C).

**speed rating**

See *performance rating*.

**speed stress**

A form of sensory overload in which the rate of information presentation is too high for adequate human processing.

**speeding**

Operating at a speed, possibly below the posted limit, above that which a reasonable and prudent person would operate under the circumstances.

**spent nuclear fuel**

According to the Federal Nuclear Policy Waste Act of 1982: Fuel that has been withdrawn from a nuclear reactor following irradiation, the constituent elements of which have not been separated by reprocessing.

**spent shale**

Shale that remains after the kerogen present in oil shale has been converted to shale oil and removed.

**spent solvent**

Under RCRA, a solvent which no longer meets the specifications for which it was originally intended.

**SPEX**

See *specularly reflected light included*.

**sphenoid bone**

A highly irregular-shaped bone comprising a portion of the central base of the skull.

**spherical aberration**

That image degradation occurring in an optical system when electromagnetic rays at different distances from the optical axis are re-

fracted through a lens or reflected from a spherical mirror and cross the axis at different points.

**spherical wave**

A wave which radiates outward equally in all directions from a central point source.

**sphincter**

A muscle that surrounds an orifice and functions to close it. When relaxed, a sphincter allows materials to pass through the opening. When contracted, it closes the opening.

**sphygmomanometer**

A device for measuring arterial blood pressure. Commonly referred to in lay terms as a *blood pressure cuff*.



*The sphygmomanometer or "blood pressure cuff"*

**sphyrion**

The most distal point on the medial tibia at the ankle.

**sphyrion height**

The vertical distance from the floor or other reference surface to sphyrion. Measured with the individual standing erect and his/her weight balanced equally between both feet.

**spice**

An aromatic vegetable product for flavoring food.

**spike**

(1) *General*. A type of electrophysiological event generally characterized by a rapid, large, short-duration change in amplitude, followed by a return toward the baseline. (2) *Sampling Methods*. Samples that have been fixed with a preservative. *See also* [spiked sample](#). (3) *Maritime Operations*. One barge that is wired to head of tow that is 2 or 3 barges wide.

**spiked sample**

A sample to which a known amount of substance has been added for the purpose of determining recovery or for quality control. Also called a *spike*.

**spill**

An unplanned release of a hazardous substance, such as a liquid, solid, gas, vapor, mist, or other form which could result in workers' exposure to it or result in an adverse effect to the environment.

**spill prevention control and countermeasures plan (SPCC)**

Plan covering the release of hazardous substances as defined in the Clean Water Act.

**spillway**

A constructed passage for surplus water to run over or around a dam.

**spillway elevation**

The stage of an artificially impounded water body as determined by the spillway.

**spillway section of a dam**

That portion of a dam through which water flows; does not permit navigation.

**spin out**

*Transit (slang)*. To lose traction on slippery roadway.

**spin table**

A platform on which organisms, objects, or equipment can be oriented in various positions for rotation testing.

**spinal column**

*See* [spine](#).

**spinal cord**

The elongated portion of the central nervous system enclosed by the vertebral canal of the spine, and from which spinal nerves leave and enter to innervate the body.

**spinal erector**

*See* [sacrospinalis](#).

**spinal nerve**

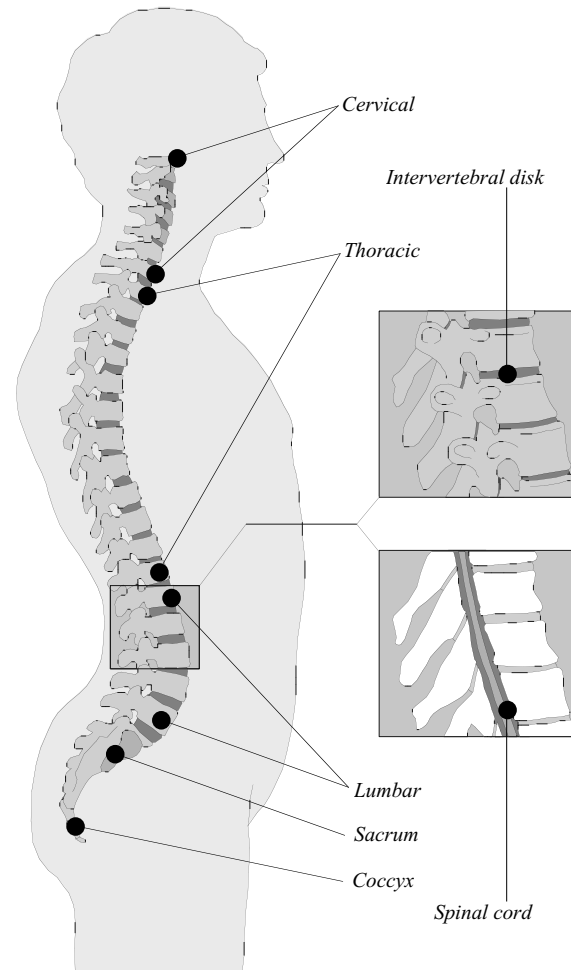
Any of the 31 pairs of nerves containing sensory and/or motor components which exit from/enter the spinal cord between vertebrae.

**SPINC**

*See* [specularly reflected light included](#).

## spine

(1) A thorn-like process or projection, also called *spina*. (2) The sequence of the vertebral bones in the neck and back. The spine is the axis of the skeleton; the skull and limbs are in a sense appendages. An intricate structure, the spine is composed of the vertebrae. These bones can move to a certain extent and so give flexibility to the spine, allowing it to bend forward, sideways, and, to a lesser extent, backward. In the areas of the neck and lower back, the spine also can pivot, which permits the turning of the head and torso. Each vertebra consists of two main parts: the body and behind it, the vertebral arch. The body is a cylinder of bone, separated from the cylinders of neighboring vertebrae by intervertebral disks, layers of cartilage that act as cushions and allow some movement. Projecting backward from each body are two short, thick, bony processes (projections) called pedicles. From the end of these pedicles project two bony plates (laminae), which join together to form the hollow vertebral arch. Through this arch, and protected by it, passes the spinal cord, which is further protected by the meninges and bathed by the cerebrospinal fluid, which serves as a shock absorber. There are usually 24 movable vertebrae and nine that are fused together. The topmost are the seven cervical vertebrae, which form the back of the neck, supporting the skull and allowing the head to turn from side to side by means of a pivotal motion between the two highest vertebrae. Below these are the 12 thoracic vertebrae, the supports on which the ribs are hinged, and then the five lumbar vertebrae, the largest movable vertebrae (the cervical being the smallest). Below the lumbar vertebrae the spine terminates with the two groups of vertebrae fused into single bones: the sacrum, composed of five vertebrae; and the coccyx, composed of four vertebrae. Viewed from the side of the body, the spine as a whole has the shape of a double S curve. The spine is more commonly referred to simply as the *backbone*.



## spine car

An articulated five-platform railcar.

## spinous process

The primary posterior prominence of a vertebra.

## spiral organ of Corti

See *organ of Corti*.

## spirant

See *fricative*.

## spirometer

(1) *Lung Function Test*. An instrument used to measure the volume of air taken into and exhaled from the lungs. (2) *Flow Calibration*. A primary standard for determining the flow rate of industrial hygiene sampling equipment and for calibrating secondary standards.

## SPL

See *sound pressure level*.

## spleen

A large gland-like organ situated under the

ribs in the upper left quadrant of the abdomen. Oblong and flattened in shape, it is dark red in color and weighs about 6 ounces. The spleen helps keep the blood free from unwanted substances, including wastes and infecting organisms. The blood is delivered to the spleen by the splenic artery, and passes through smaller branch arteries into a network of channels lined with leukocytes known as phagocytes. These clear the blood of old erythrocytes, damaged cells, parasites, and other toxic of foreign substances. Hemoglobin from the removed red cells is temporarily stored.

**splint**

A rigid or flexible appliance for fixation of displaced or movable parts. Splints are most commonly used to immobilize broken bones or dislocated joints.

**split-half reliability method**

A testing reliability measurement technique in which a correlation coefficient is computed between performance on a test which has been divided into two equivalent groups of questions.

**split shift**

A work shift in which one or more individuals work less than approximately 7 hours, are released for more than an hour for other than a meal break, then return for a regularly scheduled additional work period. May be referred to as broken shift.

**splitting on the heads**

*Maritime.* Term describing the situation when a towboat is faced up to the center of two strings of barges.

**spoil**

Dirt or rock that has been removed from its original location, destroying the composition of the soil in the process, as with strip mining or dredging.

**spondylosis**

A stiffness in a portion of the spine.

**sponginess**

The inexact response of a teleoperator to controls due to the use of a compressible fluid as a transmission medium.

**spongy bone**

*See cancellous bone.*

**sponsor**

(1) The administrating body for the airport, such as a state or local government or municipal authority. (2) Any private owner of a public-use airport or any public agency (either individually or jointly with other public agencies) who submit to the Secretary of Transportation, in accordance with the Airport & Airway Improvement Act of 1982, an application for financial assistance.

**spontaneous combustion**

The ignition of a material as a result of a heat-producing chemical reaction (exothermic) within the material itself and without exposure to an external source of ignition. *See also spontaneous combustion.*

**spontaneous ignition**

Ignition resulting from a chemical reaction in which there is a slow generation of heat from the oxidation of a compound until the ignition temperature is reached. *See also spontaneous combustion.*

**spontaneous ignition temperature**

The temperature at which a material ignites of its own accord in the presence of air at standard conditions.

**spontaneous nucleation**

The freezing of pure water without the benefit of any nuclei.

**spoonbill barge**

A 50-foot wide barge with a very long rake, usually about 60 feet.

**spore**

A microorganism, such as a bacterium, in a dormant or resting state.

**sporicide**

*See sterilizer.*

**sport-utility vehicle (SUV)**

Includes light trucks that are similar to jeeps. Other common terms for these vehicles are sport-utility, special purpose, utility, or off-the-road vehicles. They may have a four- or two-wheel drive. Previously called *jeep-like vehicle*.

**spot cooling**

Body cooling maintained within a restricted area.

**spot heating**

Body heating within a restricted area.

**spot market**

Buying and selling of fuel for immediate or very near-term delivery by contracts to meet peak demands.

**spot zoning**

The granting of a zoning classification to a piece of land that differs from that of the other land in the immediate area.

**spotted fever**

A febrile disease characterized by a skin eruption, such as Rocky Mountain spotted fever, boutonneuse fever, and other infections due to tick-borne rickettsiae.

**spotter**

*Transit.* Terminal yard driver who parks vehicles brought in by regular drivers, also a supervisor who observes the activities of drivers on the road. *See also yardbird.*

**SPR**

*See strategic petroleum reserve.*

**sprain**

An injury, typically occurring at a joint, in which the ligaments are stretched and/or torn. There may also be damage to the associated blood vessels, muscles, tendons, and nerves. A sprain is more serious than a strain, which is simply the over-stretching of a muscle, without swelling. Severe strains may be so painful that the joint cannot be used. There is much swelling, with reddish to blue discoloration owing to hemorrhage from ruptured blood vessels.

**sprawl**

Unplanned development of open land.

**spreading caliper**

A caliper which has two tips on curved rods which are separable and a scale which is used to measure the separation distance between those tips.

**spreadsheet**

A matrix in which the values of certain cells may be determined/computed from the values of other cells.

**spring**

(1) A mechanical mechanism that can store a set amount of energy under tension. (2) A place where water issues from the ground naturally.

**spring element**

A modeling in which the values of certain cells may be determined/computed from the values of other cells.

**spring line**

A line to hold a boat from running upstream. Used in mooring, crossing one another. Also called *backing line*.

**spring-loaded control**

A switch or lever which remains in the active position only as long as force is maintained due to resistance by some type of spring mechanism.

**spring switch**

*Rail Operations.* A switch equipped with a spring device which forces the points to their original position after being trailed through and holds them under spring compression.

**sprinkler alarm**

An approved device installed so that any water flow from a sprinkler system equal to or greater than that from a single automatic sprinkler will result in an audible alarm signal on the premises.

**sprinkler system**

A system of piping designed in accordance with fire protection engineering standards and installed to control or extinguish fires. The system includes an adequate and reliable water supply, and a network of specially sized piping and sprinklers which are interconnected. The system also includes a control valve and a device for actuating an alarm when the system is in operation.

**sprue**

A chronic disease, affecting the digestive system, that is marked by imperfect absorption of food elements, especially fats but also certain vitamins, from the small intestine. Symptoms are loss of appetite, flatulence, anemia, diarrhea, stomach cramps, and extreme loss of weight.

**spud**

*Maritime Operations.* The heavy timber or pipe extending vertically through a well in the bottom of the boat used for mooring in lieu of anchors on riverboats.

**spud barge**

A barge utilizing spuds for mooring. Used as a work barge or loading and unloading platform.

**spur**

A growth projecting from a bone.

**sputum**

Material that is ejected from the lungs, bronchi, and trachea through the mouth.

**sq. ft.**

Square foot (feet).

**SQG**

See *small quantity generators*.

**SQL**

See *sample quantitation limit*.

**squall line**

Any non-frontal line or band of active thunderstorms.

**squamous**

Covered with, or formed of, scales.

**squamous cell**

Flat or scale-like epithelial cells.

**squamous cell carcinoma**

A rapidly growing and readily metastasizing carcinoma originating in the epidermis, particularly the prickly cell layer. See also *carcinoma*.

**squatting height**

The vertical distance from the floor or other reference surface to the highest point on the head. Measured with the individual in the squatting position, with the trunk, neck, and head erect and balanced on the toes of both feet.

**squealer**

*Transit (slang)*. Colloquial term for a device whose proper name is tachograph. A device used in a cab to automatically record miles driven, number of stops, speed, and other factors during a trip. Also known as *tattle-tale*.

**squeeze**

The failure or inability to equalize pressure in gas-filled spaces within the body during changes in environmental pressure.

**squelch**

See *noise suppressor*.

**squirrel cage fan**

A centrifugal blower with forward-curved blades.

**SRP**

See *seat reference point*.

**SRR**

See *skin resistance response*.

**SRT**

See *speech reception threshold*.

**S/S**

See *sector suite*.

**SSHA**

See *system/subsystem hazard analysis*.

**SSPP**

See *system safety program plan*.

**SSU**

Saybolt seconds universal. See *Saybolt universal seconds*.

**St. Elmo's fire**

A bright electric discharge that is projected from objects (usually pointed) when they are in a high electric field, such as during a thunderstorm.

**stabilimeter**

A device for measuring body sway.

**stability**

(1) *General*. That condition in which a position is maintainable, tends to be maintained, or is returned to after some movement. (2) *Atmospheric*. The tendency of the atmosphere to resist vertical motion, or alternately to suppress existing turbulence. It is related to both wind shear and temperature structure vertically, but it is generally the latter which is used as an indicator of atmospheric stability. (3) *Employment*. The tendency of an individual or workforce to remain in the same geographical region or in the same employment.

**stabilization**

Conversion of the active organic matter in sludge into inert, harmless material.

**stabilization ponds**

See *lagoon*.

**stabilize**

(1) To ensure that an individual will not be adversely affected by external forces while performing some function. (2) To treat a substance such that it is not itself or in combination with other substances capable of ad-



versely affecting the general environment. (3) To reduce undesirable vehicle motion either through active or passive mechanisms or devices.

**stabilized channel**

*Maritime.* A channel which remains in one location permanently with no maintenance.

**stabilized retinal image**

That type of vision in which, through artificial means, the target image does not move on the retina when the eye moves, thus exposing the retina to fixed stimulation.

**stabilizer**

(1) *Anatomy.* See *fixator*. (2) *Aerodynamics.* Any horizontal or vertical surface of an airframe whose purpose is to provide for stable flight through the use of specific design surfaces which facilitate (or stabilize) air flow over the surface.

**stable air**

A mass of air that is not moving normally, so that it holds rather than disperses pollutants. Also referred to as *absolutely stable air*.

**stable detonation velocity**

See *detonation*.

**stable isotope**

A non-radioactive isotope of an element.

**stable materials**

Chemicals that have the ability to resist changes in their composition despite exposure to water, air, pressure, temperature extremes, or shock.

**stable wave**

See *frontal wave*.

**stack**

(1) A chimney or smokestack; a vertical pipe that discharges used air. It is the device on the exhaust end of a ventilation system which disperses contaminants for dilution by the atmosphere. (2) An exhaust pipe on diesel.

**stack car**

An articulated five-platform rail car that allows containers to be double stacked.

**stack effect**

Pressure-driven airflow produced by convection as heated air rises, creating a positive pressure area at the top of a building and a negative pressure area at the bottom of a building. The stack effect can overpower the

mechanical system and disrupt ventilation and circulation in a building.

**stack gas**

See *flue gas*.

**stack sampling**

The collection of representative samples of gaseous or particulate matter that is flowing through a stack or duct to the environment.

**stacktrain**

A rail service whereby rail cars carry containers stacked two high on specially operated unit trains.

**stadiometer**

A device for measuring height, consisting of a vertical rod with an attached rule and an adjustable horizontal headboard that can be moved vertically.

**stage 2 aircraft**

An aircraft that has been shown to comply with the stage 2 noise requirements under Federal Aviation Regulation (FAR) Part 36. Examples include the B-727-200, DC-9, and BAC-111.

**stage 3 aircraft**

An aircraft that has been shown to comply with the quieter Stage 3 noise requirements under Federal Aviation Regulation (FAR) Part 36. Examples include the B-737-300, B-757, MD-80, and A-310.

**staggered shift**

A work schedule established by management which involves work hours displaced in time by some portion of the workday.

**staggers**

A CNS-involved form of decompression sickness in which motor function is adversely affected, giving the appearance of staggering movements when walking.

**stagnation**

Lack of motion in a mass of air or water that tends to hold pollutants.

**stair railing**

A vertical barrier erected along exposed sides of a stairway to prevent falls or persons.

**staircase procedure**

A method of limits technique in which the value of a stimulus is increased or decreased on a given trial based on the result of the ob-

server's response on the previous trial or group of trials.

**stairs**

A series of steps leading from one level or floor to another, or leading to platforms, pits, boiler rooms, crossovers, or around machinery, tanks, and other equipment that are used more or less continuously or routinely by employees, or only occasionally by specific individuals. A series of steps and landings having three or more risers constitutes stairs. Also referred to as *stairway*.

**stairway**

A stair and the region immediately surrounding it. *See also stairs.*

**stairwell**

A stairway which is enclosed on at least two sides.

**stake body**

Truck or trailer platform body with readily removable stakes, which may be joined by chains, slats, or panels.

**stamina**

The ability of the various bodily systems being utilized in a given task to sustain efficient performance for long periods of time.

**STAMINA**

A computer model for predicting the level of highway noise to determine whether or not acoustic barriers are needed.

**stammer**

A speech impairment in which an individual involuntarily speaks hesitatingly, usually making multiple attempts to say a speech element or transposing speech elements.

**stamping gait**

A type of gait in which the individual stamps one or both of his/her feet.

**stance**

(1) That phase of a gait cycle where at least one foot is in constant contact with the ground. (2) Any static body position or posture where at least one foot is in constant contact with the ground or other base of support.

**standard**

(1) Regulated levels or concentration of a substance. (2) A consensus approach to the conduct of an action or a specific set of ac-

tions leading to the accomplishment of a goal or objective. (3) Any established value for comparison purposes or accepted procedure for measurement or testing. (4) *U.S. Coast Guard*. Prescribes design constraints or performance requirements for boats and/or associated equipment. May be either a regulation or may be voluntary.

**standard air**

(1) *Ventilation*. Dry air at 70°F, 29.92 inch Hg (mercury); or, air at 50% relative humidity, 68°F, and 29.92 inch Hg. In either case, the air density is equal to 0.075 lbs./cu.ft. (pounds per cubic feet). Also referred to as *standard conditions*. (2) *Industrial Hygiene*. Air at 25°C (77°F) and 760 mm mercury pressure.

**standard air density**

*Ventilation*. The density of air at standard conditions is 0.075 pounds per cubic foot.

**standard allowance**

Any allowance established in advance by calculation, arbitrary setting, or negotiation to provide for specified working conditions.

**standard atmosphere**

An atmospheric pressure of 1.01325 N/m<sup>2</sup> with a density of 13.5951 gm/cc.

**standard barge**

A barge which is approximately 26 feet wide and 175 feet long and either open or covered.

**standard body**

*Transit*. A body type normally furnished as a standard option by the original equipment (chassis) manufacturer (e.g., pick-up, panel, and flat bed).

**Standard Colors of Textiles (SCOT)**

A variant of the Munsell color-ordering system for the textile industry.

**standard conditions**

*See standard air.*

**standard cost**

The estimation of the cost of a system, product, or activity based on standard times for similar work.

**standard coverage**

The number of jobs, personnel, or total hours which are covered by standards during the reporting period.

**standard cubic foot**

A volume unit of measurement at a specified temperature and pressure. The temperature and/or pressure vary based on the discipline. For example, the specified temperature employed in industrial hygiene determinations is 25°C (77°F).

**standard data**

A structured collection of normal time values for work elements arranged in some readily accessible form. Also known as *standard time data*. See also *analytical standard data*.

**standard daylight**

Any of a variety of standard illuminants which define the spectra for different types of daylight.

**standard design vehicle**

A vehicle procurable from regular production lines. Included in this category are commercially designed vehicles modified for special purpose use, if the modifications have not altered the basic design characteristics of the vehicle.

**Standard Deviate Observer (SDO)**

A derived value which is typical of those color differences which occur on metameric matches made by real observers with normal color vision.

**standard deviation**

(1) In statistical analysis, a value equal to the square of the variance. (2) A unitless number which indicates the scatter of data from the mean. (3) A measure of the variability or dispersion of a set of results. (4) The square root of the sample variance.

**standard element time**

The standard time for a given work element.

**Standard Ergonomic Reference Data System (SERDS)**

A proposed standardized reference system for ergonomic/human factors data.

**standard error**

An estimate of the magnitude by which an obtained value differs from the true value.

**standard error of estimate**

A measure of the deviation of the measured values from the predicted value over repeated samples.

**standard error of the mean (SEM)**

A measure of the variability of the distribution of sample arithmetic means with respect to the theoretical population standard deviation.

**standard hour**

The production quantity required from an operator to meet a one hour quota.

**standard hour plan**

An incentive plan in which a worker is paid for standard hours instead of the actual work hours.

**standard illuminant**

Any of a set of specified, but not necessarily physically realizable, radiant light sources having a defined spectrum. See also *daylight lamp*.

**Standard Industrial Classification (SIC)**

Code for classifying all types of commercial businesses (including industry) based on their primary product or service rendered. See *SIC Code* for a table of the classification codes.

**standard instrument department (SID) charts**

*Aviation*. Designed to expedite clearance delivery and to facilitate transition between takeoff and en route operations. Each SID procedure is presented as a separate chart and may serve a single airport or more than one airport in a given geographical location.

**standard labor rate**

A rate calculated to approximate the total per hour cost of salaries and related fringe benefits for application against labor hours in pricing job orders.

**standard man**

A theoretical, physically fit man of standard height, weight, and other parameters including blood, tissue, composition, percent water, weight or organs, etc. that can be used in studies of man's response to various stimuli and for designing equipment relative to ergonomic considerations. Also called *standard worker*. See also *reference man*.

**standard method**

See *standard practice*.

**standard metropolitan statistical area**

*Aviation*. A county that contains at least one city of 50,000 population, or twin cities with a combined population of at least 50,000, plus

any contiguous counties that are metropolitan in character and have similar economic and social relationships. *See also central city, and metropolitan statistical area.*

**standard nine scale (stanine)**

An older term for the measure of dispersion scale having a range of nine, a mean of 5.0, and a standard deviation of 1.96.

**standard observer**

*See CIE Standard Observer.*

**standard of care**

In the law of negligence, that degree of care which a reasonably prudent person should exercise in the same or similar circumstances. If a person's conduct falls below such standard, he/she may be liable for injuries or damages resulting from such conduct.

**standard of living**

The ability to provide oneself and his/her immediate family with those necessary and desirable things in life.

**standard of performance**

Under the Clean Air Act: Any standard for emissions of air pollutants which reflects the degree of emission limitation achievable through the application of the best system of emission reduction which (taking into account the cost of achieving such reduction and any non-air quality health and environmental impact and energy requirements) the EPA Administrator determines has been adequately demonstrated.

**standard output**

That quantity of work completed by a standard worker or group of standard workers using a specified method or standard practice over a given work period.

**standard performance**

That performance of a qualified individual worker or group of workers which meets a standard output.

**standard practice**

A standardized work method, whether recorded or not, for the various steps involved in some operation.

**standard practice sheet**

A form which is used to provide the written standard practice information for an operator.

**standard radiator**

*See blackbody.*

**standard railing**

A vertical barrier erected along exposed edges of a floor opening, wall opening, ramp, platform, or runway to prevent falls of persons.

**standard railway gauge**

Distance between the rails of a track of 4 ft 8.5 inches.

**standard rating**

That rating which corresponds to a motivated, qualified worker, adhering to a specified method, and working at an average pace.

**standard score**

The expression of a point within a sample distribution as some multiple of the unit standard deviation to indicate its direction and distance from the mean.

**standard size bus**

A bus from 35 to 41 feet in length.

**standard stimulus**

A stimulus whose value is fixed in a given dimension, and which is used in experiments to determine difference thresholds.

**standard system**

A coded time-and-motion dataset which is regarded as authoritative for a given plant or location.

**standard temperature and pressure (STP)**

The condition of a volume of gases at 0°C and a pressure of 1 atmosphere.

**standard temperature and pressure, dry (STPD)**

The condition of having a water-vapor-free volume of atmospheric gases at 0°C and 1 atmosphere pressure.

**Standard Terminal Arrival (STAR) route charts**

*Aviation.* Designed to expedite air traffic control arrival procedures and to facilitate transition between en route and instrument approach operations. Each STAR procedure is presented as a separate chart and may serve a single airport or more than one airport in a given geographical location.

**standard threshold shift**

*OSHA.* A change in hearing threshold relative to the baseline audiogram of an average of 10 decibels or more at the 2000, 3000, and 4000 Hz frequencies in either ear.

**standard time**

- (1) The total expected time, as determined by work measurement techniques, to complete a given task when working at a standard rating.
- (2) The mean solar clock time during the winter months.

**standard time data**

See *standard data*.

**Standard Time System**

An incentive plan in which worker awards are determined by the number of units produced per unit time.

**standard worker**

See *standard man*.

**standard workweek**

The 5-day, approximately 40-hour work schedule within one calendar week (typically on the first shift).

**standardize**

Establish a common set of terms, procedures, criteria, or other appropriate aspects for a particular item or activity.

**standardized death rate**

That number of deaths per 1000 population which would normally occur in a given group having a known age-specific death rate.

**standardized mortality ratio (SMR)**

The ratio of the number of deaths observed in the study group (cohort) to the number of deaths expected in the study group based on the rate as determined for an unexposed control population. If the ratio of these results is greater than one, it indicates an increased risk for the exposed population. The greater the SMR is above 1, the greater the risk.

**Standardized Tests for Research with Environmental Stressors (STRES)**

A test battery selected by AGARD as having evidence for a good psychometric basis for standardization in the evaluation of human performance.

**standards**

Prescriptive norms which govern action and actual limits on the amount of pollutants or emissions produced. EPA, under most of its responsibilities, establishes minimum standards. States are allowed to be stricter.

**standards audit**

One or more work measurement studies designed to examine whether existing standard times and methods are still proper.

**Standards Completion Project**

A NIOSH-supported project that was carried out to develop sampling and analytical methods for application in the field of industrial hygiene.

**standby**

An operational mode in which a worker, crew, or set of equipment is not actively engaged in generating work output, but is prepared for whatever action may be required.

**standby time**

A time interval or the total amount of time spent in a standby mode.

**standing**

A concept utilized to determine if a party has a sufficient stake in a controversy to be a plaintiff in a lawsuit.

**standing capacity**

The number of standing passengers that can be accommodated aboard the revenue vehicle during a normal full load (non-crush) in accordance with established loading policy or, in absence of a policy, the manufacturer's rated standing capacity figures.

**standing wave**

*Acoustics.* A periodic wave having a fixed distribution in space which is the result of interference of progressive waves of the same frequency and kind. In such situations sound does not decrease as the distance from the source is increased. Marked variations in sound pressure are observed. The measured sound pressure decreases to a minimum, rises again to a maximum, decreases to a minimum, increases to a maximum, etc. Such patterns are referred to as standing waves.

**standout**

*Maritime Navigation.* Term used when the channel runs down the shape of the shore and there is an obstruction along the set of marks running out into the middle of the river, thus requiring a temporary change of course to clear.

**standpipe systems**

- (1) *Class I standpipe system.* A 2 1/2 inch (6.3 cm) hose connection for use by fire departments and those trained in handling heavy fire

streams. (2) *Class II standpipe system*. A 1 1/2 inch (3.8 cm) hose system which provides a means for the control or extinguishing of incipient stage fires. (3) *Class III standpipe system*. A combined system of hose which is for the use of employees trained in the use of hose operations and which is capable of furnishing effective water discharge during the more advanced stages of fire (beyond the incipient stage) in the interior of workplaces. Hose outlets are available for both 1 \_ inch (3.8 cm) and 2 \_ inch (6.3 cm) hose.

**stanine**

See *standard nine scale*.

**stannosis**

A form of a pneumoconiosis resulting from the inhalation of tin-bearing dust.

**stapedius**

That muscle in the middle ear which inserts into the stapes.

**STAR**

See *Standard Terminal Arrival route chart*.

**starboard**

The right side of a ship or vessel when facing the bow or front.

**startle response**

A strong psychophysiological response, triggered by a sudden and intense stimulus, which prepares the body for possible physical action. Also known as *defensive response*. See also *orienting response*.

**startup allowance**

A special-case time allowance for any waiting or time involved where a worker has to turn on or otherwise check out equipment or machinery at the beginning of a work period.

**startup curve**

The learning curve applied to a new job, process, individual, or group to allow for the longer than standard initial work times.

**stasis**

The stoppage or lessening of the flow of blood or other body fluid in any part of the body.

**state**

The condition of matter (solid, liquid, gas, or plasma).

**State**

A state of the United States, the District of Columbia, the Commonwealth of Puerto Rico,

the Commonwealth of the Northern Mariana Islands, the Virgin Islands, American Samoa, Guam, or any other territory or possession of the United States designated by the Secretary of Transportation.

**state audit immunity statutes**

Legislation enacted by many states encouraging businesses to conduct environmental audits and promptly correct noncompliance without fear of punishment from state authorities. Also known as *Environmental Audit Privilege Statutes*.

**state-designated route**

*Transportation*. A preferred route selected in accordance with U.S. DOT "Guidelines for Selecting Preferred Highway Routes for Highway Route Controlled Quantities of Radioactive Materials" or an equivalent routing analysis which adequately considers overall risk to the public.

**State Emergency Response Commission (SERC)**

Commission appointed by each state governor according to the requirements of SARA Title III. The SERC's designated emergency planning districts appoint local emergency planning committees, and supervise and coordinate their activities.

**state hazardous waste sites (SHWS)**

Site records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds are identified along with sites where clean up will be paid for by potentially responsible parties. Available information varies by state.

**state implementation plan (SIP)**

*Clean Air Act*. EPA-approved state plans for the establishment, regulation, and enforcement of air pollution standards. Establishes source-specific requirements under the Clean Air Act that address the primary and secondary air quality standards within a state's borders to assure consistency with the National Ambient Air Quality Standards (NAAQS).

**state of domicile**

That state where a person has his/her true, fixed, and permanent home and principal residence and to which he/she has the intention of returning whenever he/she is absent.



**state routing agency**

An entity (including a common agency of more than one state such as one established by interstate compact) which is authorized to use state legal process pursuant to 49 CFR 177.825 to impose routing requirements, enforceable by state agencies, on carriers of radioactive materials without regard to intra-state jurisdictional boundaries. This term also includes Indian tribal authorities which have police powers to regulate and enforce highway routing requirements within their lands.

**state transportation agency**

The state highway department, transportation department, or other state transportation agency to which federal-aid highway funds are apportioned.

**state's attorney**

See *district attorney*.

**static**

Motionless or unchanging.

**static anthropometry**

The study of the bodily dimensions of an individual in a given fixed posture.

**static contraction**

See *isometric action*.

**static display**

A display containing one or more screen structures that remain the same for long periods of time.

**static electricity**

Literally, electricity at rest. It consists of opposite electrical charges that are usually kept apart by insulation. It is the result of the accumulation of electric charge on an insulated body and its potential for discharge as a result of such an accumulation of electric charge.

**static equilibrium**

The ability to maintain body posture or balance through a sense of position or motion of the head with respect to gravity from the integrated involvement of the utricular macula, vision, and the cerebellum and muscle. See also *dynamic equilibrium*.

**static friction**

That friction acting between surfaces with no relative motion between them.

**static loaded radius arc**

*Transit*. A portion of a circle whose center is the center of a standard tire-rim combination

of an automobile and whose radius is the distance from that center to the level surface on which the automobile is standing, measured with the automobile at curb weight, the wheel parallel to the vehicle's longitudinal centerline, and the tire inflated to the manufacturer's recommended pressure.

**static muscle work**

See *static work*.

**static pressure (SP)**

(1) *General*. The potential pressure exerted in all directions by a fluid at rest. (2) *Ventilation*. The pressure developed by a fan: static pressure exerts influence in all directions; the force in inches of water measured perpendicular to flue at the wall of the duct; the difference in pressure between atmospheric pressure and the absolute pressure inside a duct, cleaner, or other equipment.

**static strength**

The force generated by a maximal voluntary isometric muscular exertion in a brief period of time. Also called *static ultimate strength*.

**static work**

That manual work performed when muscles are isometrically contracted, but no readily observable motion occurs. Also called *static muscle work*, *isometric work*, and *isometric muscle work*.

**statics**

The study or use of forces resulting in equilibrium, causing body parts or the body as a whole to be at rest.

**station**

With respect to intercity and commuter rail transportation, the portion of a property located appurtenant to a right-of-way on which intercity or commuter rail transportation is operated, where such portion is used by the general public and is related to the provision of such transportation, including passenger platforms, designated waiting areas, rest rooms and, where a public entity providing rail transportation owns the property, concession areas, to the extent that such public entity exercises control over the selection, design, construction, or alteration of the property, but this term does not include flag stops (i.e., stations which are not regularly scheduled stops but at which trains will stop to board or detrain passengers only on signal or advance notice).

**station pressure**

The actual air pressure computed at the observing station.

**stationarity**

A condition in which time-series data are stationary.

**stationary**

(1) *See static.* (2) Pertaining to a condition or function where the mean, spectral density, and probability distribution are independent of time.

**stationary compactor**

As pertains to solid wastes, a powered machine which is designed to compact solid waste or recyclable materials, and which remains stationary when in operation.

**stationary front**

A front that is nearly stationary with winds blowing almost parallel and from opposite directions on each side of the front.

**stationary source**

(1) *General.* A fixed, non-moving producer of pollution, mainly power plants and other facilities using industrial combustion processes. (2) *Clean Air Act.* Any building, structure, facility, or installation which emits or may emit any air pollutant.



*Stationary sources of air pollution are very closely regulated*

**stationary time series**

A stochastic time series whose characteristics are unchanged by an integral increase in the time axis.

**statistic**

A characteristic of a population or a sample of it, such as the mean, variance, etc.

**statistical analysis**

A mathematical evaluation of past performance. In failure analysis, a focus on the total possible number of times a failure or fault event will occur given many opportunities for that occurrence.

**statistical significance**

An inference that the probability is low that the observed difference in quantities being evaluated could be due to variability in the data rather than an actual difference in the quantities. The inference that an observed difference is statistically significant is typically based on a test to reject one hypothesis and accept another.

**statistical sound level**

The level in decibels that is exceeded in a stated percentage ( $x$ ) of the duration of the measurement period. It is abbreviated as  $L_x$ .

**statistical standard time**

A standard time derived from the statistical analysis of past time data.

**statistics**

The field of applied mathematics which is concerned with the analysis, presentation, and derivation of conclusions from data.

**stadiograph**

A lever system for determining the body's center of mass/gravity.

**statokinetic**

Pertaining to the body's posture and balance during standing and locomotion.

**stature**

The vertical distance from the floor or other reference surface to the top of the head. Synonymous with standing height. Measured with the individual standing erect, the lower limbs vertical, and looking straight ahead. *See also stature, maximum.*

**stature as reported**

The individual's stated value for his/her stature.

**stature, maximum**

The greatest vertical distance attainable from the floor or other reference surface to the top of the head. Measured with the individual having taken a deep breath maximally extending himself/herself vertically while keeping both feet flat on the floor, and having his/her weight equally balanced on both feet.

**statute**

An enforceable provision of law enacted by a legislature by passage of an act, with general application and future effect. Distinguished from a *resolve* or other action of a legislation which does not have some general force of law. Also, distinguished from a *regulation* promulgated by an agency. Note that in some states, a statute may be enacted by *referendum* or other ballot measure. Federal statutes are codified in the United States Code.

**statute of limitations**

A type of statute imposing a time deadline on commencing certain types of civil litigation or criminal prosecution which, if not met, is fatal to the claim or cause of action.

**statutory damages**

Damages resulting from statutorily created causes of actions, as opposed to actions at common law, e.g., wrongful death and survival actions, actions under tort claims acts; under § 504 of the federal Copyright Act, a copyright owner has the right to collect statutory damages in lieu of actual damages for copyright infringement.

**statutory exception**

A provision in a statute exempting certain conduct or persons from the thrust of the law enacted.

**statutory mandate**

A formal directive from Congress granting a particular agency the authority to act in a given area of concern, such as occupational safety and health. Also referred to as the *originating statute*.

**std**

Standard.

**STD**

Sexually transmitted disease.

**steadiness**

A measure of the ability to maintain a fixed posture with a minimum of tremor.

**steady state**

(1) The condition of a system when the inflow of materials or energy equals the output. (2) Pertaining to a condition that overall is unchanging with time, as being in equilibrium. (3) That physiological condition in which oxygen uptake by the lungs and delivery to bodily tissues by the circulatory system is equal to the oxygen requirement of the tissues for a particular activity.

**steady-state forecast**

A weather prediction based on the past movement of surface weather systems. It assumes that the systems will move in the same direction and at approximately the same speed as they have been moving. Also called *trend forecasting*.

**steady-state noise**

Sounds that remain constant with time, such as an air conditioner when in operation.

**steam**

Water in its gaseous state.

**steam fog**

See *evaporation fog*.

**steamboat gothic**

An elaborately ornamental architectural style that is an imitation of river steamboats of the middle 19th century on the Ohio and Mississippi rivers.

**steamboat jack**

Colloquial term for an oversized turnbuckle with large pelican hooks on each end and a ratchet (handle) around the body used for tightening wire lashings and making up tows. Used to connect barges in tow.

**steamship agent**

A duly appointed and authorized representative in a specified territory acting in behalf of a steamship line or lines and attending to all matters relating to the vessels owned by his principals.

**steamship conference**

*Maritime*. Collective rate-making bodies for liner water carriers that serve the same trade route.

**steel hull**

Hulls of sheet steel or steel alloy, not those with steel ribs and wood, canvas or plastic hull coverings.

**steel tower**

A skeleton steel tower type of structure used for lighted shore aids; used in multiples of 10-foot sections.

**steel wheel**

In rail systems, the specially designed cast or forged steel, essentially cylindrical element that rolls on the rail, carries the weight, and provides guidance for rail vehicles. The wheels are semi-permanently mounted in pairs on steel axles and are designed with flanges and a tapered tread to provide for operation on a track of a specific gauge. The wheel also serves as a brake drum on cars with on-tread brakes.

**steer it**

*Maritime Navigation (slang).* To navigate a portion of the river without flanking maneuvers.

**steering wheel**

A circular control device which is connected to a guiding mechanism and may be turned by hand to control the course and/or direction of a vehicle.

**steering wheel lash**

The condition in which the steering wheel may be turned through some part of a revolution without associated movement of the front wheels. Commonly referred to as *play* in the steering wheel.

**STEL**

See *short-term exposure limit*.

**stenosing tenosynovitis**

A partial reduction in the flexion or extension of a joint due to an inflammation and thickening or swelling of the tendons (or their sheaths) of the muscles providing action about that joint.

**stenosis**

Narrowing or contraction of a body passage or opening.

**stepladder**

A self-supporting portable ladder, nonadjustable in length, having flat steps and a hinged back. Its size is designated by the overall length of the ladder measured along the front edge of the side rails.

**steppage gait**

A type of locomotion with an exaggerated flexion of the hip and knee resulting in a high-

stepping gait with a flopping of the foot which tends to drag.

**steppe**

An area of grass-covered, treeless plains that has a semiarid climate.

**stepped leader**

See *lightning*.

**steradian (sr)**

A unit of measure for solid angles, with one steradian equal to that solid angle of a sphere which has vertex at the center and intersects an area on the surface of that sphere with four equal length sides, each equal to the radius in arc length. See also *solid angle*.

**stereoacuity**

See *stereoscopic acuity*.

**stereogram**

(1) A two-dimensional graphic which gives the impression of depth using contour lines or shading. (2) A pair of separate two-dimensional views which, when positioned properly and presented separately to the right and left eyes using a stereoscope, cause the visual system to integrate them into a single view appearing to be three-dimensional or to have depth.

**stereometric anthropometry**

A form of non-contact anthropometric measurement using stereophotogrammetric techniques to determine surface distances, angles, areas, and other appropriate measures.

**stereophotogrammetry**

The determination of positions in space from video or film involving either two cameras aligned along different axes in the same plane or a single camera and mirrors.

**stereophotography**

A photographic technique which simulates stereoscopic vision by using two different cameras separated by some distance in space or a stereoscopic camera.

**stereopsis**

See *stereoscopic vision*. See also *binocular vision*.

**stereoscope**

An optical device capable of giving an impression of depth when presenting an appropriate visual display to each eye.

**stereoscopic acuity**

The ability to perceive the three-dimensional aspect of physical space, or depth, by the use of two eyes or vision sensors separated in space. Also referred to as *stereoacuity*.

**stereoscopic photography**

See *stereophotography*.

**stereoscopic vision**

The capability of perceiving depth and distance in the region near the fixation point by the use of two eyes or video sensors slightly separated in space.

**stereoscopy**

The study or use of three-dimensional or depth aspects, effects, or techniques.

**sterilant**

A chemical or physical agent used to destroy microorganisms.

**sterile**

(1) Free from microorganisms. (2) Unable to produce offspring.

**sterilize**

To reduce living microbial life forms to below some specified quantity or to render them incapable of reproduction.

**sterilization**

(1) *General*. The destruction of all microorganisms in or on an object using heat, steam, chemical agents, ultraviolet radiation, or a combination of these. (2) *Pest Control*. The use of radiation and chemicals to damage body cells needed for reproduction.

**sterilizer**

One of three groups of anti-microbials registered by the EPA for public health uses. The EPA considers an anti-microbial to be a sterilizer when it destroys or eliminates all forms of bacteria, fungi, viruses, and their spores. Because spores are considered the most difficult form of a microorganism to destroy, the EPA considers the term *sporicide* to be synonymous with sterilizer.

**stern**

The end of a vessel, opposite of bow.

**stern line**

A long quartering line.

**stern line talk**

Supposedly factual information about anything, passed between river people, usually by

a lockman chatting with deck crew handling lines during lockage.

**sternocleidomastoid**

A bilateral, voluntary muscle located approximately vertical from the sternum and clavicle to the lower part of the posterior temporal bone.

**sternum**

The bone articulating with the ribs and clavicle bones in the midline of the anterior torso, and consisting of three segments: the xiphoid process, body, and manubrium. Also commonly referred to as the *breastbone*.

**steroid**

A complex molecule containing carbon atoms in four interlocking rings, three of which contain six carbon atoms each and the fourth of which contains five.

**stethoscope**

An instrument used to hear and amplify the sounds produced by the heart, lungs, and other internal organs. As first introduced by the 19th century French physician, Rene Laennec, the stethoscope was a simple wooden tube with a bell-shaped opening at one end. The modern stethoscope is binaural, with two ear pieces and flexible rubber tubing leading to them from the two-branched opening of the bell or cone. In this way, sound travels simultaneously through both of the branches to the ear piece.



*The modern stethoscope*

**stevedore**

A person or firm that contracts with a vessel's owner, agent, or charter operator, or with the owner of the cargo, to load or unload a ship or barge in port.

**Stevens' power law**

A psychophysical relationship between sensation and stimulus physical intensity, consisting of a power function of the form:

$$S = k(I_s)^n$$

where:

$S$  = sensation strength

$I_s$  = stimulus intensity

$k$  = a constant depending on the units of measurement

$n$  = an exponential value which varies depending on the subject and type of stimulus/sensory modality.

**STI**

See *speech transmission index*.

**stickman**

A simple figure for modeling human posture or motion in which straight lines are used to approximate the various body links or segments.

**sticky keys**

A feature which enables sequential use of keyboard keys rather than simultaneous use in certain multikey operations for allowing disabled individuals to operate the computer.

**stiction**

That friction which tends to prevent relative motion between two movable objects at a neutral position.

**stiffness**

(1) The rigidity of a teleoperated system. (2) The ratio of the force/torque applied to the corresponding change in translational/rotational displacement of an elastic element.

**stigmatism**

A condition in which the refractive system of the eye causes light rays to be accurately focused on the retina.

**stilb (sb)**

A CGS unit of luminance equal to 1 cd/cm<sup>2</sup> (an older term).

**Stiles-Crawford effect**

The reduced effectiveness in stimulation of the retina by a light ray entering the eye near

the periphery of the pupil compared to that light entering at or near the center of the pupil.

**stilling basin**

A structure at the outlet end of a spillway to help dissipate the energy of flowing water into the downstream channel in such a manner as to prevent damage to the dam or scour of the bed or banks of the channel.

**Stilling test**

A color vision test involving the use of a set of plates, each containing a colored digit embedded within a set of colors easily confused by those with color vision deficiencies.

**stimulus**

Any type of cue presented to an organism, whether internal or external. Typically referring to a cue strong enough to be consciously perceived.

**stimulus generalization**

The production of a response due to the presentation of a similar, but not identical, stimulus to that which originally produced the response.

**stinger-steered combination**

A truck tractor semitrailer wherein the fifth wheel is located on a drop frame located behind and below the rear-most axle of the power unit.

**stipple cell**

A red blood cell containing granules of varying size and shape.

**stochastic effects**

Health effects that occur randomly and for which the probability of the effect occurring, rather than its severity, is assumed to be a linear function of dose without threshold. Hereditary effects and cancer incidence are examples of stochastic effects.

**stochastic variable**

See *random variable*.

**stock solution**

Solution consisting of an accurately measured weight of a substance of known purity dissolved in a known volume of suitable solvent. The concentration of this solution is traceable to a primary weight standard.

**stockholder's equity**

The aggregate interest of holders of the entity stock in assets owned by the entity.



**stockyard**

An enclosed area in which livestock are temporarily kept.

**stoker's cramp**

See *heat cramp*.

**Stoke's law**

The fall of a liquid or solid body through any fluid media is expressed by Stoke's law, which states that the settling velocity is a function of gravity, the diameter and density of the falling body, as well as the viscosity, coefficient of viscosity, and density of the media.

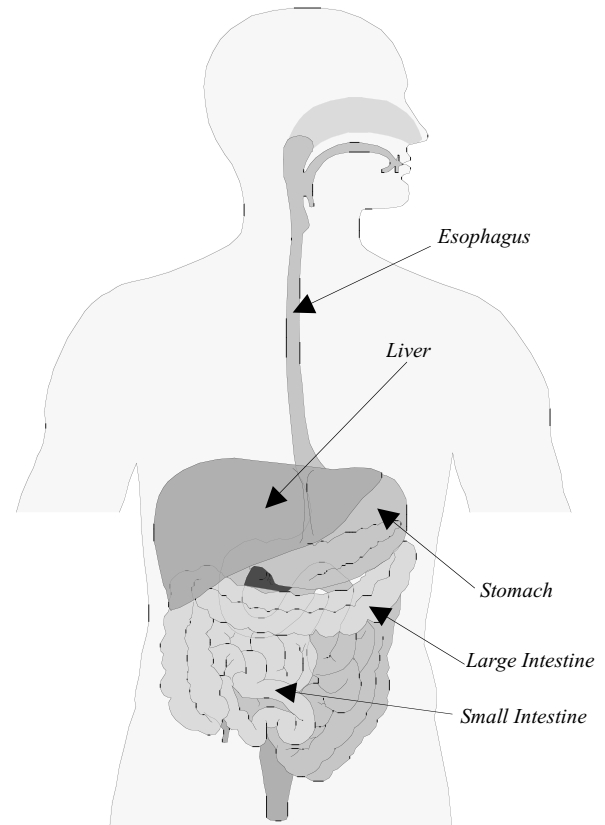
**stolport**

An airport specifically designed for Short Takeoff and Landing (STOL) aircraft, separate from conventional airport facilities.

**stomach**

A curved, muscular, saclike structure that is an enlargement of the alimentary canal between the esophagus and the small intestine. The wall of the stomach consists of four coats: an outer serous coat; a muscular coat, made up of longitudinal, circular, and oblique muscle fibers; a submucous coat; and a mucous coat or membrane forming the inner lining. The muscles account for the stomach's ability to expand when food enters it. The muscle fibers slide over one another, reducing the thickness of the stomach wall while increasing its area. When empty, the stomach has practically no cavity at all, since its walls are pressed tightly together. When full, the average stomach holds about 1\_ quarts. The stomach muscles perform another function. When food enters the stomach, the muscles contract in rhythm. Their combined action sends a series of wavelike contractions from the upper end of the stomach to the lower end. These contractions, known as peristalsis, mix the partially digested liquid until it has the consistency of a thick soup; the contractions then push it into the small intestine. The stomach is emptied of its digested contents in 1 to 4 hours, or longer, depending upon the amount and type of food eaten. Foods rich in carbohydrates leave the stomach more rapidly than proteins, and proteins more rapidly than fats. The stomach may continue to contract after it is empty. The contraction of the empty stomach stimulates nerves in its wall and may cause hunger pangs. The mucous membrane lining the stomach contains innu-

merable gastric glands. Their secretion, gastric juice, contains enzymes, mucin, and hydrochloric acid. Enzymes help to split the food molecules into smaller parts during digestion. Mucin acts on certain sugars and also protects the mucous lining of the stomach from coarse particles and from the corrosive hydrochloric acid. Hydrochloric acid aids in dissolving the food before enzymes begin working on it. See also *digestion*.



*The stomach and its relationship in the digestive system*

**stomatitis**

Inflammation of the oral mucosa (mucous lining), due to local or systemic factors. It may be caused by one of many diseases of the mouth or it may accompany another disease.

**stomion**

The point of contact between the upper and lower lip of the mouth in the midsagittal plane.

**stomion to top of head**

The vertical distance from stomion to vertex plane. Measured with the individual sitting or standing erect and facing straight ahead.

**stone setter's adjustable multiple-point suspension scaffold**

A swinging-type scaffold having a platform supported by hangers suspended at four points so as to permit the raising or lowering of the platform to the desired working position by the use of hoisting machines.

**stop**

(1) As applied to mechanical locking, a device secured to a locking bar to limit its movement. (2) A point which should not be passed prior to performing some type of operation. (3) A consonant sound whose production requires a brief, complete cessation of air flow through the closing off of one or more of the cavities in the vocal tract, followed by opening and the release of pressure.

**stop indication point**

As applied to an automatic train stop or train control system without the use of roadway signals, a point where a signal displaying an aspect requiring a stop would be located.

**stop lamps**

Lamps shown to the rear of a motor vehicle to indicate that the service brake system is engaged.

**stopclock**

An electric or electromechanical timing device for measuring time intervals.

**stopping distance**

(1) *Rail Operations*. The maximum distance on any portion of any railroad which any train operating on such portion of railroad at its maximum authorized speed will travel during a full service application of the brakes, between the point where such application is initiated and the point where the train comes to a stop. (2) *See braking distance*.

**stopping power**

A measure of the ability of a substance or material to reduce the velocity or energy of an entity.

**stopwatch**

A portable electrical, mechanical, or electromechanical timing device.

**stopwatch time study**

The measurement of short time intervals in repetitive operations using a stopwatch or stopclock.

**stopway**

*Aviation*. A defined rectangular surface beyond the end of a runway prepared or suitable for use in lieu of runway to support an airplane, without causing structural damage to the airplane, during an aborted takeoff.

**storable swimming or wading pool**

A pool with a maximum dimension of 15 feet and a maximum wall height of 3 feet and is so constructed that it may be readily disassembled for storage and reassembled to its original integrity.

**storage**

(1) *General*. Temporary holding of waste pending treatment or disposal. Storage methods include containers, tanks, waste piles, and surface impoundments. (2) *Federal Solid Waste Disposal Act*. The containment of hazardous waste, either on a temporary basis or for a period of years, in such a manner as not to constitute disposal of such hazardous waste. (3) *Federal Nuclear Waste Policy Act of 1982*. Retention of high-level radioactive waste, spent nuclear fuel, or transuranic waste with the intent to recover such waste or fuel for subsequent use, processing, or disposal.

**storage facility**

Under the Resource Conservation and Recovery Act (RCRA), a facility which engages in the holding of hazardous waste for a temporary period, at the end of which the hazardous waste is disposed of, or stored elsewhere.

**storage loss**

An estimate of the typical losses which could occur due to the storage of samples for prolonged time periods (e.g., 10, 15, 20, etc. days) as determined using samples obtained from the same test atmosphere. *See also sample storage stability*.

**storage tank**

A container for storing a hazardous fluid, including any underground cavern.

**storm sewer**

A system of pipes (separate from sanitary sewers) that carries only water runoff from building and land surfaces.

**storm surge**

An abnormal rise of the sea along a shore, primarily due to winds of a storm, especially a hurricane.

**storm water discharge**

Any discharge from any conveyance used for collecting and conveying storm water and which is directly related to the manufacturing, processing, or raw material storage areas at an industrial plant.

**story**

That portion of a building structure included between the upper surface of a floor and the upper surface of the floor or roof above.

**stowage**

The act of placing hazardous materials on board a vessel.

**STP**

See *standard temperature and pressure*.

**STPD**

See *standard temperature and pressure, dry*.

**strabismus**

A disorder in which the eyeballs are uncoordinated due to the lack of control over the extrinsic eye muscles, resulting in the visual axes not intersecting at the desired point. See also *crossed eyes*.

**straight back rule**

A task design guideline that the back and neck should remain straight at all times during performance of a task.

**straight truck**

Vehicle with the cargo body and tractor mounted on the same chassis.

**straight wrist rule**

A task design guideline that a flexed or extended wrist be avoided when grasping, squeezing, or otherwise executing hand movements requiring any significant strength application.

**strain**

(1) To effect a change as a result of the application of a stress. Physiological, psychological, or behavioral manifestation of stress on the body. (2) An injury or disability involving the overuse, overextension, compression, or twisting of a muscle, ligament, or joint. (3) The biomechanical, physiological, and/or psychological effects from one or more stressors on an individual. (4) A change in one or more dimensions of some object due to elongation, contraction, or shear stressors.

**strain gauge**

An electrical device which uses a change in resistance on deformation to measure the amount of force applied.

**strain propagation**

See *stress transmission*.

**strain synthesis**

A simulation of work strain by a combination of work stressors.

**strained reach**

The reach capability under conditions of maximal joint extension; applying pressure to any restraints.

**strap length**

The distance from one bra tip, over the back of the neck to the other bra tip. Measured with the individual standing or sitting erect, without following the body contour.

**strategic communications**

*Aviation.* Air Traffic Management (ATM) communications that are planned as much as a day or more in advance of delivery.

**strategic petroleum reserve (SPR)**

Petroleum stocks maintained by the federal government for use during periods of major supply interruption.

**strategy**

A plan of action to accomplish a stated goal.

**stratification**

Separating into layers.

**stratified sampling**

A subject selection procedure in which the population is divided into different strata, each having one or more common characteristics, then randomly drawing samples from each strata in proportion to that group's representation in the population.

**stratocumulus**

A low cloud, predominantly stratiform with low, lumpy, rounded masses, often with blue sky between them.

**stratosphere**

That portion of the atmosphere that is ten to twenty-five miles above the Earth's surface.

**stratus**

A low, gray cloud layer with a rather uniform base whose precipitation is most commonly drizzle.

**stray**

A buoy adrift from its proper station. Strays may often be lodged in and amongst dikes, etc. Stray buoys can be particularly confusing in the rays of a searchlight at night.

**stray light**

Any undesired scattered or reflected light within a specified volume. Also called *stray luminance*.

**stream/river**

A body of flowing water.

**streamline**

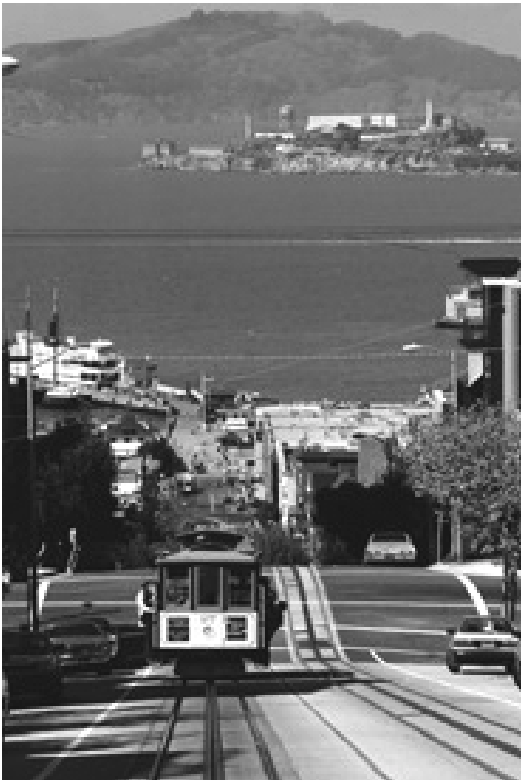
A line that shows the wind flow pattern.

**streamline flow**

Exists when fluid (e.g., air) and particles are moving in a straight line parallel to the axis of a pipe or duct. *See also laminar flow.*

**streetcar**

An electrically powered rail car that is operated singly or in short trains in mixed traffic on track in city streets. Another name for *light rail*.



*The most well-known streetcars in the United States are used in San Francisco, California*

**streetcar/trolley**

Includes trolleys, streetcars, and cable cars.

**strength**

(1) The maximum capability of an individual to exert a brief force using only his/her muscles and body segments under specified conditions. (2) *See breaking strength and yield strength.*

**strength assessment**

Any determination of an individual's strength under a given set of conditions.

**strength-duration curve**

A curve indicating the relationship between the time duration of stimulation and current flow in artificially exciting a muscle or nerve.

**streptococci**

A non-motile, non-spore-forming, aerobic-to-facultatively anaerobic bacteria that occur regularly in the mouth and intestines of humans and animals and in food and dairy products. Some species are pathogenic for humans.

**STRES**

*See Standardized Tests for Research with Environmental Stressors.*

**stress**

(1) *General.* Exceeding operable or design tolerances. (2) *Anatomical.* A physical, chemical, or emotional factor that causes bodily or mental tension and may be a factor in disease causation, fatigue, or strain. The response of the body to a demand made on it. (3) *Structural Mechanics.* The resistance by an object to application of an external mechanical force which tends to produce a deformation. Usually quantified as the force per unit area.

**stress-corrosion cracking**

A mechanical- and/or environmental-induced failure process in which sustained tensile stress and chemical attack combine to initiate and propagate a crack or a crack-like flow in a metal part.

**stress equivalent**

A quantitative biomechanical relationship between physiological outputs and physical workload.

**stress incontinence**

An involuntary urination due to shock or a startle response.

**stress intensity factor**

A parameter that characterizes the stress-strain behavior at the tip of a crack contained

in a linear elastic, homogeneous, and isotropic body.

**stress level**

The level of tangential or hoop stress, usually expressed as a percentage of specified minimum yield strength. *See also **specified minimum yield strength**.*

**stress reduction**

The use of any of several techniques, such as deep muscle relaxation, meditation, cognitive restructuring, and biofeedback, in an attempt to reduce stress levels.

**stress transmission**

The transfer of physical or psychological stress a) from the environment to the individual, b) from the individual to the environment, or c) from one part of the body to another.

**stressful work conditions**

Having an excessive amount of one or more stressors in the workplace.

**stressor**

Agent, condition, or thing that causes stress on the body.

**stretch**

To draw out or elongate an elastic entity.

**stretch out**

A reduction in the delivery rate or increase in the length of time to deliver a product, without any decrease in the total number of products delivered.

**stretch reflex**

The contraction of a muscle following a sudden longitudinal stretching of that muscle.

**stria**

A visible line inherent in certain materials or tissues such as skeletal muscle or imperfect glass.

**strict liability**

(1) *General Law*. Liability without fault. The common law imposes strict liability for damages caused by ultrahazardous activity. (2) *Product Liability Law*. A concept applied by the courts in product liability cases in which the seller is liable for any and all defective or hazardous products which unduly threaten a consumer's personal safety. This doctrine poses strict liability on one who sells a product in a defective condition unreasonably

dangerous to user or consumer for harm caused to the ultimate user or consumer if the seller is engaged in the business of selling such product, and the product is expected to and does reach the user or consumer without substantial change in the condition in which it was sold. (3) *Environmental Law (Property Transfer)*. Indicates that fault is not prerequisite to determining responsibility under the statute. The purchaser may be liable for cleanup costs even if the property was contaminated prior to his or her purchase. The original owner may also be held accountable for all or part of a property's cleanup costs despite compliance with all regulations in effect at the time of property transfer.

**strike**

(1) *Labor*. A demonstration of solidarity by a collective bargaining unit characterized primarily by a refusal to work during labor agreement negotiations. (2) *Seismology*. The direction, or trend, of the line marking the intersection of a fault plane (or another planar geologic feature) with the horizontal. Strike is always at a right angle to dip. *See also **dip**.*

**strike-slip fault**

*Seismology*. A fault along which the slip motion is parallel to the strike of the fault. *See also **strike**.*

**string diagram**

A model of a plant or facility on which a thread or string has been used to track the flow path of employees, materials, or equipment during some operational sequence.

**string out**

*See **mule train**.*

**stringer**

*See **ledger**.*

**strip cropping**

Growing crops in a systematic arrangement of strips or bands which serve as barriers to wind and water erosion.

**strip mining**

A process that uses machines to scrape soil or rock away from mineral deposits just under the earth's surface.

**strobe light**

A flash tube which may be capable of adjustable frequency, rapid flashing, rates over an extended period of time.

**stroboscope**

A device which flashes a bright light or opens a shutter intermittently to make moving objects visible.

**stroboscopic effect**

*Illumination.* Rapidly moving objects, when observed under fluorescent or mercury lighting systems, appear to be blurred or not moving.

**stroke**

(1) The distance traveled by a piston in a cylinder during 1/2 revolution of the crankshaft. (2) The motion which depresses one key when using a keyboard or keypad. (3) A single motion of a pen or cathode ray tube gun. (4) A condition in which blood flow to some portion or all of the brain is severely reduced or eliminated.

**stroke volume**

The amount of blood ejected from the left ventricle of the heart into the arterial system from one cardiac contraction cycle.

**stroke width**

The width of a drawn or displayed line.

**strong interest inventory**

A commonly used self-assessment test for aid in job seeking.

**strong outside container**

The outermost enclosure which provides protection against the unintentional release of its contents under conditions normally incident to transportation.

**strongback**

See *beam (3)*.

**Stroop color-word test**

The presentation of conflicting color and word stimuli.

**strophosphere**

A reach envelope for the hand/arm combination or the leg/foot combination in which any translational or rotational motion of the limb or its terminal segment is permitted. See also *kinetosphere*.

**struck by boat or propeller**

Striking of a victim who is outside of the boat, but not necessarily a swimmer.

**structural component**

A component such as a bolt, lug, hook, shackle, pin, rivet, or weld in a piece of material handling equipment.

**structure-borne noise**

That noise transmitted vibroacoustically through some structure.

**structure-borne sound**

Sound that travels over at least part of its path by means of the vibration of a solid structure.

**structures**

*Asbestos.* A microscopic bundle, cluster, or matrix made up of asbestos fibers or which may contain asbestos fibers.

**structures per cubic centimeters of air (s/cm<sup>3</sup>)**

The number of asbestos structures determined to be present in 1 cubic centimeter of air. Typically, there are more asbestos structures per cc of air seen on a filter sample than there are fibers per cc of air because the analytical method of counting structures (TEM) sees more countable shapes than are seen by the phase contrast method of counting fibers.

**STS**

See *Space Transportation System*.

**student pilot**

A pilot in training who may not operate an aircraft that is carrying a passenger or that is carrying property for compensation or hire.

**study session**

An interaction between interested participants to obtain or learn new information and evaluate current information.

**stutter**

A speech impairment in which an individual speaks hesitatingly due to difficulty in saying certain syllables. See also *stammer*.

**stylium**

The most distal point on the lateral margin of the radius styloid process at the wrist.

**styloid process**

A long, spine-like projection from a bone.

**stylus**

A pen- or pencil-shaped computer input device, usually used in conjunction with a digitizing tablet for drawing or marking input locations.

**subarachnoid space**

A region between the arachnoid layer and the pia mater surrounding the brain, which is filled with cerebrospinal fluid.



**subassembly**

The combination of two or more parts forming a unit which is a component of a larger product or system.

**subchronic RfD**

An estimate (with an uncertainty spanning perhaps an order of magnitude or greater) of a daily exposure level for the human population, including sensitive subpopulations, that is likely to be without an appreciable risk of deleterious effects if the exposure were to occur for a period of less than seven years.

**subcontract**

An agreement with a party other than the prime contractor or the original contracting customer to perform services and/or provide one or more products.

**subcontractor**

See *contractor*.

**subcutaneous**

Beneath the skin.

**subcutaneous emphysema**

An accumulation of gas beneath the skin surface.

**subdivision**

Division of real estate into new parcels not presently served by road utilities.

**subdural hematoma**

An accumulation of blood between the dura mater and arachnoid layer covering the brain.

**subischial height**

The vertical linear distance from the floor or other reference surface to the height of the lowest point of the ischial tuberosity. Generally assumed to represent the length of the lower extremities; estimated by subtracting sitting height from stature.

**subject**

A member of a specified population or sample who is selected according to some specified methodology and from whom a researcher intends to obtain data.

**subjective**

Pertaining to some internal measure, state, or aspect which is not directly observable or verifiable by more than one person except as the product of an individual's verbal or other reporting means.

**subjective brightness**

See *brightness*.

**subjective report**

Any appropriate form of expression by an individual regarding some effect, experience, or other phenomenon which cannot be independently verified or quantified.

**subjective vertical**

That direction which an individual perceives as vertical.

**Subjective Workload Assessment Technique (SWAT)**

A method for determining mental workload, in which ratings on three scales (time, mental effort, and psychological stress) are combined or examined separately to provide the workload measure.

**sublimation**

The process whereby ice changes directly into water vapor without melting. In meteorology, sublimation can also mean the transformation of water vapor into ice. See also *deposition* (2).

**sublimation nuclei**

See *deposition nuclei*.

**subliminal**

Pertaining to a stimulus having an intensity below the perceptual or responsive threshold.

**sublingual**

Pertaining to or a structure which lies beneath the tongue.

**submandibular**

Below the mandible.

**submarine**

(1) *General*. A marine vessel capable of prolonged and extensive operation either totally or partially submerged underwater. (2) *Transit (slang)*. To slide under a lap safety belt or other object intended for restraint.

**submerged stream**

An old river course inundated by an impounded water body.

**subnasale**

The junction of the base of the nasal septum and the philtrum.

**subnasale to back of head**

The horizontal linear distance from the base of the nasal septum toinion. Measured with

the individual standing erect and facing straight ahead.

**subnasale to top of head**

The vertical distance from the base of the nasal septum to the horizontal vertex plane. Measured with the individual standing or sitting erect.

**subnasale to wall**

The horizontal linear distance from a wall to the base of the nasal septum. Measured with the individual standing erect with his/her back against the wall.

**subregional port**

Waterfront area which a) has place identity, by reason of association with an adjacent or nearby town or city; b) has at least three commercial terminals located within a reasonable distance of the general area; and c) is served by a major railroad and at least one major interstate or U.S. highway.

**subrogation**

The legal process in which one party attempts to recover the amount paid under a policy to an insured from a third party when the latter may have been responsible for the situation causing the loss.

**subscapular skinfold**

The thickness of a skinfold taken at an angle about 45° to horizontal just below the inferior angle of the scapula. Measured with the individual standing comfortably erect and the arms hanging naturally at the sides.

**subscapular skinfold, recumbent**

The subscapular skinfold measure, but using a skinfold from the inferior angle of the scapula pointing toward the elbow. Measured with the individual lying on one side, the acromial processes of the shoulders aligned vertically, and the arm positioned along the side of the body with the palm against the thigh.

**subscript**

An alphanumeric character or symbol placed just to the right and below another character or symbol, often of smaller point size.

**subscription bus**

A commuter bus express service operated for a guaranteed number of patrons from a given area on a prepaid, reserved basis.

**subsidence**

The slow sinking of air, usually associated with high-pressure areas.

**subsidence inversion**

A temperature inversion produced by the adiabatic warming of a layer of sinking air.

**subsonic**

Traveling at a velocity less than that of sound in a given medium (an outdated term).

**subsonic sound**

Sound energy in the frequency range below 20 Hz.

**substantial damages**

(1) *General*. A sum, assessed by way of damages, which is worth having; opposed to nominal damages, which are assessed to satisfy a bare legal right. Considerable in amount and intended as a real compensation for a real injury. (2) *Aviation – NTSB*. As stated in 49 CFR 830.2, damage or structural failure which adversely affects the structural strength, performance, or flight characteristics of the aircraft, and which would normally require major repair or replacement of the affected component. This does not include engine failure, damage limited to an engine, bent fairings or cowling, dented skin, small punctured holes in the skin of the fabric, ground damage to rotor or propeller blades, damage to landing gear, wheels, tires, flaps, engine accessories, brakes, or wingtips.

**substantial discretionary authority**

Under the Federal Sentencing Guidelines (FSGs): Individuals who, within the scope of their authority, exercise a substantial measure of discretion in acting on behalf of the organization. Includes high-level personnel with substantial discretionary authority and any other individuals who although not a part of the organization's management nevertheless exercise substantial discretion when acting within the scope of their authority. *See also effective compliance program.*

**substantial evidence rule**

Such evidence that a reasonable mind might accept as adequate to support a conclusion. It is that quality of evidence necessary for a court to affirm a decision of an administrative board. Substantial evidence is evidence possessing something of substance and relevant consequences and which furnishes substantial

basis of fact from which issues tendered can be reasonably resolved.

**substantive defense**

Deals with the validity and applicability of a particular standard to the facts of the case, the nature of the employer's conduct, and its effect on the safety and health of employees.

**substernale**

The most inferior point on the xiphoid process in the midsagittal plane.

**substernale height**

The vertical distance from the floor or other reference surface to substernale in the midsagittal plane. Measured with the individual standing erect and his/her weight balanced equally on both feet.

**substitution**

The replacement of a hazardous material or source of physical stress with a less hazardous one.

**substitution analysis**

An examination of the rate at which new equipment or technology is projected to replace that existing in the present economy.

**subsystem**

An element of a system that, in and of itself, may constitute a system.

**subtask**

A set of task elements which comprise a logical, describable unit within a task.

**subtracted time**

The time representing the period required for completion of one or a group of work elements obtained from the difference between successive stopwatch or stopclock readings when using a continuous timing technique.

**subtractive color mixing**

The addition and integration of one or more colored substances or materials to an existing set.

**subtropical high**

A semipermanent high in the subtropical high-pressure belt centered near 30° latitude. The *Bermuda high* is located over the Atlantic Ocean off the east coast of North America. The *Pacific high* is located off the west coast of North America.

**subtropical jet stream**

The jet stream typically found between 20° and 30° latitude at altitudes between 12 and 14 kilometers.

**suburban bus**

A bus with front doors only, normally with high-backed seats, and without luggage compartments or restroom facilities for use in longer-distance service with relatively few stops.

**suburban railroad**

*See commuter railroad.*

**subway**

(1) That portion of a transportation system that is constructed beneath the ground surface, regardless of its method of construction. (2) An underground rail rapid transit system or the tunnel through which it runs. (3) In local usage, sometimes used for the entire rail rapid transit system, even if it is not all beneath the ground surface. (4) A pedestrian underpass.



*Subway systems provide extremely efficient mass transit*

**subway tunnel/tube**

Rail transit way below surface with a cover over the tunnel. Cut and cover, bored tunnel, underwater tubes, etc. are included.

**suction**

The admission of fresh air into an interior space by lowering the pressure outside of the space, thereby drawing the contaminated air inward. *See also ventilation.*

**suction piping**

Piping which does not require leak detection if it has the following two main characteristics: a) below-grade piping is sloped so that the contents will drain back into the storage tank if the suction is released; b) each suction

line has only one check valve which is located directly below the suction pump.

**suction pressure**

An outdated term that refers to static pressure on the upstream side of a fan in a ventilation system. See *static pressure*.

**suction vortices**

Small, rapidly rotating whirls perhaps 10 meters in diameter that are found within large tornadoes.

**sudden injury**

An injury occurring unexpectedly and not naturally or in the ordinary course of events. Sometimes called violent injury.

**sudoriferous gland**

See *sweat gland*.

**sufficient evidence**

Adequate evidence. Such evidence in character, weight, or amount as will legally justify the judicial or official action demanded.

**suffocation**

The stoppage of breathing or the asphyxia that results from it. If suffocation is complete (i.e., no air at all reaches the lungs), the lack of oxygen and excess of carbon dioxide in the blood will cause almost immediate loss of consciousness. Though the heart continues to beat briefly, death will follow in a matter of minutes unless emergency measures are taken to get breathing started again. Suffocation can be caused by drowning, electric shock, gas or smoke poisoning, strangulation, or choking on a foreign body in the trachea.

**suffusion**

The spreading or flow of any bodily fluid through interstitial spaces into surrounding tissue.

**sugar**

Any of a class of carbohydrates having a chemical formula of the type  $C_nH_{2n}O_n$  or  $C_nH_{2n+2}O_{n-1}$ , and generally having a sweet taste.

**suicide**

A person ending his or her own life intentionally.

**suit**

The term given a civil action filed in court. Also known as a *lawsuit*.

**sulfur dioxide (SO<sub>2</sub>)**

A heavy, pungent, colorless, gaseous air pollutant formed primarily by the combustion of fossil plants.

**SUMMA canister**

An evacuated stainless steel canister used for collecting samples of ambient air.

**summary judgment**

A stage in civil litigation where a party seeks to win on the law as applied to facts shown by the pleadings and affidavits to be uncontested. In other words, the court decides on a *motion for summary judgment* that there are no material facts in dispute warranting a trial, and that a party should win on the law.

**summation**

The additive effects in neural, muscular, or mental activities.

**Summer solstice**

Approximately June 22 in the Northern Hemisphere when the sun is highest in the sky and directly overhead at latitude 23.5°N, the Tropic of Cancer.

**Summerstock**

*U.S. Coast Guard*. Operation Summerstock has been a major program over the past fifteen years where Search and Rescue (SAR) stations in the Ninth District are augmented by Reserve personnel during the busy summer SAR season.

**sump**

A well, pit, tank, or reservoir usually located indoors for catching liquid runoff for drainage or disposal.

**sump pump**

A mechanism for removing water or wastewater from a sump or wet well.

**sunburn**

A discoloration or inflammation of the skin due to excessive exposure to the ultraviolet light from the sun.

**sundog**

A colored luminous spot produced by refraction of light through ice crystals that appears on either side of the sun.

**sunlight**

That radiation from the sun within or near the visible spectrum.

**sunspots**

Relatively cooler areas on the sun's surface. They represent regions of extremely high magnetic field.

**Super Lien Law**

Provides states the authority to impose a lien on any property requiring clean up that involves state expense. The super lien law takes precedence over all other encumbrances including first mortgages.

**supercell storm**

An enormous severe thunderstorm whose updrafts and downdrafts are nearly in balance, allowing it to maintain itself for several hours. It can produce large hail and tornadoes.

**Supercockpit**

A USAF program for developing a virtual workspace having many advanced display/control technologies for pilot/crew interaction.

**supercooled cloud**

A cloud composed of liquid droplets at temperatures below 0°C (32°F). When the cloud is on the ground, it is called *supercooled fog* or *cold fog*.

**Superfund**

Popular name of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980. The program operated under the legislative authority of CERCLA and SARA that funds and carries out the EPA solid waste emergency and long-term removal remedial activities. These activities include establishing the National Priorities List (NPL), investigating sites for inclusion on the list, determining their priority level on the list, and coordinating and/or supervising the ultimately determined clean-up and other remedial actions. *See also Comprehensive Environmental Response, Compensation, and Liabilities Act of 1980.*

**Superfund Amendments and Reauthorization Act (SARA)**

Enacted in 1986 to ensure that communities throughout the country would be prepared to respond to chemical accidents and to provide the public with information on hazardous and toxic chemicals used and released in their own communities (SARA, Title III). Also known as the *Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA)*.

**Superfund Comprehensive Accomplishments Plan (SCAP)**

An EPA document which provides details on each hazardous waste site and those clean-up activities that are expected to occur during each fiscal quarter.

**superheated steam**

Steam at a temperature higher than the boiling temperature corresponding to the pressure at which it exists.

**superhigh frequency (SHF)**

That portion of the electromagnetic spectrum consisting of radiation frequencies between 3 GHz and 30 GHz.

**superhighway**

A multi-lane, limited access highway for high-speed surface vehicular traffic, such as a turnpike, freeway, or expressway.

**superior**

Located above relative to another structure.

**superior levator**

A flat extraocular muscle which raises the upper eyelid.

**superior mirage**

*See mirage.*

**superior oblique muscle**

A voluntary extraocular muscle principally for rotating the upper part of the eyeball medially about the optical axis.

**superior rectus muscle**

A voluntary extraocular muscle parallel to the optical axis along the upper eyeball for looking/pitching the eyeball upward

**superiority of trains**

The precedence conferred upon one train over other trains by train order or by reason of its class or the direction of its movement.

**supernova**

A tremendous explosion of a massive star.

**supersaturated air**

A condition that occurs in the atmosphere when the relative humidity is greater than 100 percent.

**superscript**

An alphanumeric character or symbol normally placed just above and to the right of another character or symbol, and which may be smaller in point size.

**supersonic**

(1) Faster than the velocity of sound. (2) *See ultrasonic.*

**superstition**

An unsubstantiated belief that a cause-effect relationship exists between two or more events.

**supervisor**

One who oversees and directs the work activities and is involved in any personnel actions of a subordinate.

**supervisory control**

Having computer hardware and software at either or both ends of an operator–teleoperator loop to aid decision making.

**supinate**

To rotate the forearm clockwise about its proximal-to-distal longitudinal axis, as viewed from the shoulder.

**supinator**

Any muscle which is involved in a supinating motion.

**supine**

Pertaining to a posture in which the anterior portion of the body faces upward, the torso is aligned parallel to a reference surface, and the hips and knees are extended.

**supplemental air carrier**

(1) An air carrier holding a certificate issued under section 401(d)(3) of the Federal Aviation Act, or a special operating authorization issued under section 417 of the Act. (2) One of a class of air carriers now holding Certificates of Public Convenience and Necessity issued by the Department of Transportation authorizing them to perform passenger and cargo charter services supplementing the scheduled service of the certificated route air carriers. Both international and domestic charter operations are for a temporary period. The authority of supplemental air carriers to engage in military charters is of an indefinite period. In addition, they can perform on an emergency basis, as may be authorized by the Department of Transportation, scheduled operations including the transportation of individually ticketed passengers and individually waybilled cargo. (3) An air carrier certificated in accordance with FAR Part 121, and providing nonscheduled or supplemental car-

riage of passengers or cargo, or both, in air transportation. Also referred to as *nonscheduled* or *charter* air carriers.

**Supplemental Data System**

A Bureau of Labor Standards program involving the national collection and distribution of workers' compensation data for the purpose of aiding in the determination of accident causes.

**supplementary lighting**

Any lighting supplied in addition to that general lighting which is normally available at a given location to provide a certain quality or quantity.

**supplied-air respirators**

A device that supplies breathing air to the wearer through hoses carrying a continuous flow of air, usually from a breathing-air compressor or from a bank air supply under pressure. A series of regulators and valves is often employed to ensure proper air flow. Often used in highly contaminated atmospheres or oxygen deficient atmospheres.

**supplied-air suit**

A closed suit which is impermeable to most particulate and gaseous contaminants and which provides the wearer with an adequate supply of breathable air.

**supplies and other net spare parts**

*Aviation.* Flight equipment replacement parts of a type recurrently expended and replaced rather than repaired or reused, supplies such as unissued fuel inventories and unissued materials and supplies held in stock, prepaid items, net investments in direct financing and sales type leases, and other current assets. Spare parts may be reduced by an allowance for obsolescence to provide for losses in value.

**supply air (SA)**

In a ventilation system, the air supplied to a space from the air handling system.

**supply air diffuser**

A fixture and opening through which air is supplied to a space.

**suppression of evidence**

The ruling of a trial judge to the effect that evidence sought to be admitted should be excluded because it was illegally acquired.



**suppuration**

The formation of pus, or the act of becoming converted into and discharging pus.

**suprachiasmatic nucleus**

A group of cells above the optic chiasm in the hypothalamus which receives input directly from the retina and is believed to be involved as a pacemaker in biological rhythms.

**supracondylar**

A structure located superior to a condyle.

**suprailiac skinfold**

The thickness of a skinfold directed antero-medially and downward at an angle of 45° on the midaxillary line just superior to the level of the iliac crest. Measured with the individual standing comfortably erect, the body weight distributed equally on both feet, and the abdominal muscles relaxed.

**supraliminal**

Pertaining to a stimulus intensity above the perceptual threshold.

**suprapatellar skinfold**

The thickness of a vertical skinfold on the lower thigh, 2 cm above the patella. Measured with the individual standing comfortably erect, the weight equally distributed on both feet, and the leg muscles relaxed.

**suprasternal notch**

The depression on the superior surface of the manubrium. Also called *jugular notch*.

**suprasternale**

The lowest point in the suprasternal notch on the superior edge of the manubrium.

**suprasternale height**

The vertical distance from the floor or other reference surface to suprasternale. Measured with the individual standing erect and his/her weight equally balanced on both feet.

**suprasternale height, sitting**

The vertical linear distance from the upper seat surface to suprasternale. Measured with the individual sitting erect, on a non-compressible seat; used to provide a measure of trunk length.

**surface**

The exterior of an object; the most superficial layer or part of a structure.

**surface acoustic wave touchscreen**

A display having a surface layer which emits ultrasonic energy and which indicates a touch location through absorption of the energy by the water content of the finger.

**surface active agent**

*Surfactant*. Any of a class of chemicals used in cleaning which act to emulsify oils, grease, and attached dirt by reducing the interface tension of the substances involved.

**surface distance**

A measurement representing the distance when following the general surface contour of some structure.

**surface impoundment**

Treatment, storage, or disposal of liquid hazardous waste in ponds.

**surface inspection**

A nondestructive examination method, other than visual, used for detection of surface and near surface discontinuities.

**surface inversion**

See [radiation inversion](#).

**surface model**

An image in which only the edges and surfaces of objects are displayed.

**surface rights**

Fee ownership in surface areas of land. Also used to describe a lessee's right to use as much of the surface of the land as may be reasonably necessary for the conduct of operations under the lease.

**surface rupture**

The breakage of ground along the surface trace of a fault caused by the intersection of the fault surface area ruptured in an earthquake with the Earth's surface.

**surface tension**

That force acting on the surface of a liquid substance which tends to minimize the surface area.

**surface trace**

The intersection of a fault plane with the surface of the Earth. It is sometimes, but not always, expressed at the surface by geomorphic evidence (ridges, valleys, saddles, etc.).

**surface water**

All water naturally open to the atmosphere (rivers, lakes, reservoirs, streams, impound-

ment areas, seas, estuaries, etc.) and all springs, wells, or other collectors which are directly influenced by surface water.

**surface-wave magnitude ( $M_S$ )**

A magnitude determined at teleseismic distances using the logarithm of the amplitude of 20-second period surface waves generated by an earthquake.

**surfactant**

A surface-active agent used in detergents to cause lathering. *See also surface active agent.*

**surge**

A sudden, short-lived increase in energy output.

**surge pressure**

Pressure produced by a change in velocity of the moving stream that results from shutting down a pump station or pumping unit, closure of a valve, or any other blockage of the moving stream.

**surplus**

Any excess personal property not required for the needs and the discharge of the responsibilities of any federal agency, as determined by the Administrator of General Services.

**surplus energy**

Energy generated that is beyond the immediate needs of the producing system. This energy may be supplied by spinning reserve and sold on an interruptible basis.

**surrogate**

In sampling, the measurement of one compound in place of determining the presence of many others. For example, the determination of an oxygenate component of gasoline as a surrogate or marker for that product rather than determining the presence of all components in it.

**surround brightness**

The brightness of the immediate background near the work area.

**surveillance**

(1) *General Safety.* To physically monitor, on a continuous or random schedule, a work operation, task, procedure, or process to ensure or verify compliance with general or specific safety requirements. (2) *Aviation.* The detection, location, and tracking of aircraft within National Airspace System (NAS) air-

space for the purposes of control, separation, and identification. Surveillance systems are electronic in nature; visual methods are purposely excluded. In the case of dependent surveillance, the aircraft provides all flight information. Surveillance systems are differentiated as independent, independent cooperative, and dependent.

**surveillance system**

A series of monitoring devices designed to determine environmental quality.

**survey**

(1) *General.* A general or specific assessment of the conditions currently existing at a given location or with a given process, usually with reference to some known standard or approved criteria or protocol. (2) *Industrial Hygiene.* The determination of the exposure of workers to health hazards based on the concentration, frequency, and duration of exposure, as well as the exposure controls and work practices associated with an individual's exposure to an airborne contaminant, physical stress, ergonomic factor, or biologic agent. (3) *Ionizing Radiation.* An evaluation of the radiological conditions and potential hazards associated with the production, use, transfer, release, disposal, or presence of a radioactive material or other source of exposure to ionizing radiation.

**survey meter**

A portable instrument that measures ionizing radiation dose rate.

**survival ratio**

The ratio of the number of individuals surviving a situation to the number present prior to that situation.

**SUS**

*See Saybolt universal seconds.*

**susceptible**

Describes a person or animal lacking sufficient resistance to prevent disease if or when exposed to a particular pathogenic agent.

**susceptor**

One or more aluminum strips within a microwave cooking dish which help cook the enclosed food.

**suspended solids**

Small particles of solid pollutants that float on the surface of, or are suspended in sewage or other liquids. They resist removal by conventional means.

**suspension**

(1) A temporary dismissal from work for improper activities in the workplace, which may be with or without pay. (2) That mechanism used to improve ride quality by isolating a land vehicle from the shock and vibration experienced by movement on a surface. (3) The act of suspending the use of a pesticide when EPA deems it necessary to do so to prevent an imminent hazard resulting from continued use of the pesticide. An emergency suspension takes effect immediately; under an ordinary suspension a registrant can request a hearing before the suspension goes into effect. Such a hearing process might take six months.

**suspension culture**

Individual cells or small clumps of cells growing in a liquid nutrient medium.

**sustainability**

A recent trend in environmental management to create opportunity for continuous improvement and job growth in dealing with contaminated properties and development.

**sustained hold**

The maintenance of a position for an indefinite or long period of time.

**sustained yield**

Under the Federal Land Policy and Management Act of 1976: The achievement and maintenance in perpetuity of a high-level annual or regular periodic output of the various renewable resources of the public lands consistent with multiple use.

**suture**

(1) A type of skeletal joint in which adjacent bone surfaces are essentially fused together. (2) To close a wound using sewing techniques.



*Sutures used to close a wound just over the eye*

**SUV**

See *sports utility vehicle*.

**Sv**

See *sievert*.

**SVOC**

Semi-volatile organic compound.

**swab test**

A surface contact method of microbiological examination of surfaces, usually used to assess the effectiveness of cleaning and sanitizing procedures.

**swallowing**

The taking in of a substance through the mouth and pharynx and into the esophagus. It is a combination of a voluntary act and a series of reflex actions. Once begun, the process operates automatically.

**swamp**

A type of wetland that is dominated by woody vegetation and does not accumulate appreciable peat deposits. Swamps may be fresh or salt water and tidal or non-tidal. See also *wetlands*.

**swamp and overflowed lands**

Lands unfit for cultivation by reason of their swampy character and requiring drainage or reclamation to render them available for beneficial use.

**swamping**

Filling with water, particularly over the side, but retaining sufficient buoyancy to remain on the surface. See also *sinking*.

**swap file**

*Computing.* A file Windows creates on a computer's hard disk that it uses to swap information into and out of memory. Windows uses the swap file to create virtual memory. There are two types of swap files: permanent and temporary. See *permanent swap file* and *temporary swap file*.

**swarm**

*Seismology.* A series of minor earthquakes, none of which may be identified as the main-shock, occurring in a limited area and time.

**swash**

The mass of broken foaming water which rushes bodily up a beach as a wave breaks.

**SWAT**

See *Subjective Workload Assessment Technique*.

**swatch**

A piece of cloth for comparing color or pattern in the textile industry.

**S-wave**

A seismic body wave which propagates by a shearing motion in which particles vibrate in a direction perpendicular to that of the propagation of the wave. Slower than the P-wave, the S-wave always arrives after the P-wave (the "S" stands for secondary). Its speed is roughly 3 to 4 km/sec in the crust and 4.4 to 4.6 km/sec in the upper mantle. Because of its shearing motion, it cannot propagate through liquids. The S-wave is responsible for the determination that the Earth's outer core is liquid, since S-waves cannot travel through the outer core. *See also P-wave.*

**swayback**

(*slang*). A greater than normal lordosis of the lumbar spine. May be accompanied by increased compensatory kyphosis of the thoracic spine.

**SWDA**

Solid Waste Disposal Act (federal).

**sweat**

(1) To secrete sweat from the pores of the skin. (2) The transparent, colorless, water-based fluid consisting of fats, salts, carbohydrates, and other materials secreted from the sweat glands. During periods of maximal sweating, as in extremely hot weather, the amount of water eliminated can account for a loss of as much as 8 pounds of body weight per day. Excessive sweating is called *diaphoresis*.

**sweat gland**

A coiled tube-shaped gland in the skin which secretes sweat. Also called *sudoriferous gland*.

**sweating**

The excretion of perspiration through the pores of the skin. *See also sweat.*

**sweet crude oil**

Crude oil that is low in sulfur, especially little or no hydrogen sulfide.

**SWF/LS**

*See Solid Waste Facilities/Landfill Sites.*

**swimmer's ear**

*See otitis media.*

**swing**

The phase of a gait cycle during which the foot is not in contact with the ground.

**swing dog**

*Rail Operations.* A locking dog mounted in such a manner that it is free to rotate on a trunnion which is riveted to a locking bar.

**swing shift**

(1) A work shift which overlaps two other shifts, usually on an around-the-clock operation. (2) That work shift which a crew works following and in addition to its regular shift to rotate shifts by eight hours in an around-the-clock operation. This crew works two shifts (about 16 hours) on the day of the shift. (3) That work shift which is manned by a crew which rotates to work all three shifts within a week on a 7-day, around-the-clock operation to provide days off to workers on each of the other shifts.

**swinging-arm rule**

A task design guideline that any movements of the arms should follow a natural arc, and that a barrier or stop should bring the motion to a halt rather than muscular activity.

**swinging platform**

*See two-point suspension scaffold.*

**swinging-vane anemometer**

Device that measures air velocity and static pressure by utilizing the compression of a calibrated spring by the moving air stream. Also known as a *velometer*.

**switch**

(1) *General.* Any mechanical or electrical device which may close or open a path, or change the direction of an entity traveling along a path. (2) *General-use Switch.* A switch intended for use in general distribution and branch circuits. It is rated in amperes and is capable of interrupting its rated current at its rated voltage. (3) *General-use Snap Switch.* A form of general-use switch so constructed that it can be installed in flush device boxes or on outlet box covers, or otherwise used in conjunction with wiring systems recognized by applicable standards. (4) *Isolating Switch.* A switch intended for isolating an electric circuit from the source of power. It has no interrupting rating, and it is intended to be operated only after the circuit has been opened by some other means. *See also disconnecting switch.* (5) *Motor-circuit*

*Switch.* A switch, rated in horsepower, capable of interrupting the maximum operating overload current of a motor of the same horsepower rating as the switch at the rated voltage.

**switch-and-lock movement**

*Rail Operations.* A device, the complete operation of which performs the three functions of unlocking, operating, and locking a switch, movable-point frog or derail.

**switch circuit controller**

*Rail Operations.* A device for opening and closing electric circuits, operated by a rod connected to a switch, derail, or movable-point frog.

**switch in**

To remove barges from the main tow and move them into an unloading or fleeting area. The switching is done by the switching tug.

**switch out**

To move barges from the unloading or fleeting area to the main tow.

**switch providing access**

A switch which if traversed by rolling equipment could permit that rolling equipment to couple to the equipment being protected.

**switch shunting circuit**

A shunting circuit which is closed through contacts of a switch circuit controller. *See also* **shunt** and **shunt fouling circuit**.

**switchboard**

A large single panel, frame, or assembly of panels which have switches, buses, instruments, overcurrent and other protective devices mounted on the face or back or both. Switchboards are generally accessible from the rear as well as from the front and are not intended to be installed in cabinets. *See also* **panelboard**.

**switching and terminal railroad**

A company primarily performing switching service, furnishing terminal trackage, bridges, or other facilities such as union freight stations, operating ferries, or performing any one or combination of these functions. It may coincidentally conduct a regular freight or passenger service.

**switching boat**

Tug used to move barges between the loading or fleeting area and the main tow. Usually has about 1350 horsepower.

**switching devices**

As pertains to systems over 600 volts (nominal), devices designed to close and/or open one or more electric circuits. Included in this category are circuit breakers, cutouts, disconnecting (or isolating) switches, disconnecting means, interrupter switches, and oil (filled) cutouts.

**switching service**

A railway service performed under yard rules and regulations. It may involve the classification of cars according to commodity and destination; the assembling of cars for train movement; changing the position of cars for purposes of loading, unloading, and weighing; the placing of locomotives and cars for repair and storage; and the moving of equipment in connection with the carrier's work service not constituting a road movement.

**swivel**

The ability of a chair or other object to rotate in either direction about a central vertical axis.

**SWRCA**

Soil and Water Resources Conservation Act of 1977 (federal).

**sycosis**

A pustular inflammation of the hair follicles, usually of the beard.

**sycosis barbae**

A staphylococcal infection and irritation of the hair follicles in the beard region. It may be associated with other superficial bacterial infections, such as impetigo or furunculosis.

**Sydenham's chorea**

A usually temporary form of chorea associated with rheumatic heart disease in children. The disease is characterized by purposeless, irregular movements of the voluntary muscles that cannot be controlled by the afflicted person. The spasmodic jerking movements may be mild or severe and frequently begin as awkwardness and facial grimaces. *See also* **Huntington's chorea**.

**sympiosis**

A mutually beneficial cohabitation of dissimilar organisms.

**symbol**

Any graphical character or other representation which is intended to: a) stand for something else, b) communicate a use for an ob-



ject/structure, or c) communicate what should or should not be done at a given time or location.

**symbolic control**

The use of symbols/graphics as input to exercise a controlling function.

**symbolology**

The study or use of a set of symbols for communication.

**symmetry**

Having corresponding similar components or appearance on either side of an imaginary point, axis, or plane.

**sympathetic**

Pertaining to the division of the autonomic nervous system originating from the thoracic and lumbar sections of the spinal cord, its ganglia are located near the spinal column, and it generally opposes the parasympathetic division by actively responding in stressful conditions. Synonymous with *thoracolumbar*.

**sympathy**

A shared feeling or identification with another individual.

**symphyseal height**

The vertical distance from the floor or other reference surface to symphysis. Measured with the individual standing erect and weight equally distributed on both feet.

**symphysis**

The lowest point of the pubic symphysis.

**symphysis**

A normally non-movable skeletal joint in which bones are tightly joined by a cartilaginous plate.

**symptom**

Subjective evidence of disease or illness, as indicated by a departure from the normal in structure, function, or sensation, as experienced by an individual.

**synapse**

The electrical and/or chemical junction between two or more neurons at which information can be passed from one cell to another.

**sychromesh transmission**

A transmission with mechanisms for matching up the gear speeds so that they can be

shifted without clashing, eliminating need for double clutching.

**synchronization allowance**

See *interference allowance*.

**synchronizer**

See *entraining agent*.

**syncope**

A temporary loss of consciousness due to hypoxia of the brain. Commonly referred to as *fainting*. See also *faint*.

**syndrome**

The combined set of signs and symptoms that typifies a particular disease.

**synergism**

The cooperative interaction of two or more chemicals or other substances or phenomena that produces a total effect greater than that of the sum of the individual effects. See also *synergy*.

**synergist**

An entity which acts to assist another entity when their efforts are combined, referring especially to a muscle aiding another muscle in performing its action.

**synergistic effect**

The added effect produced by two processes working together in combination, the result of which is greater than the sum of the individual effects.

**synergy**

The effect when two or more substances, conditions, organisms, etc. achieve a result which each is individually incapable of achieving.

**synesthesia**

Experiencing a sensation in another sensory modality which accompanies a primary sensation evoked by a stimulus in the primary modality.

**synkinesia**

The involuntary motion of limbs which coincides with voluntary movement of another part of the body. Also called *accessory movement*.

**synonym**

Refers to another name by which a specific chemical may be known. For example, a synonym for toluene is toluol.



**synoptic scale**

The typical weather map scale that shows features such as high- and low-pressure areas and fronts over a distance spanning a continent. Also referred to as the *cyclonic scale*.

**synovial fluid**

A clear, viscous fluid contained within certain joints, bursa, and tendons which provides lubrication for movement of those structures.

**synovial membrane**

That tissue which encloses a synovial cavity at a synovial joint.

**synovitis**

The reaction or series of reactions by which a complex compound is obtained from simpler compounds or elements.

**synthesis**

The reaction or series of reactions by which a complex compound is obtained from simpler compounds or elements.

**synthetic basic motion times**

A set of standard times assigned to individual motions and groups of such motions via synthesis.

**synthetic data**

Any value(s) obtained from established tables or formulas, not empirically from the actual situation(s) to which they are relevant. *See also synthesis.*

**synthetic organic chemicals (SOCs)**

Manmade organic chemicals. Some SOC's are volatile, others tend to stay dissolved in water rather than evaporate out of it.

**synthetic standard data**

Standard times obtained from synthetic data.

**synthetic vision**

The use of millimeter radar waves to see through clouds, haze, or certain other non-visually transparent media to create images of what lies within or beyond that media.

**syringe**

An instrument for introducing fluids into the body or a body cavity. A common example is the hypodermic syringe which is used for the introduction of liquids through a hollow needle into subcutaneous tissue.



*The common hypodermic syringe*

**system**

(1) *General*. An organized set of principals or ideas. (2) *System Safety*. A combination of people, procedures, facility, and/or equipment all functioning within a given or specified working environment to accomplish a specific task or set of tasks. (3) *Transportation*. Total operations of a carrier or carrier grouping including both domestic and international operations. (4) *Medical*. A set or series of interconnected or interdependent parts or entities (objects, organs, or organisms) that acts together in a common purpose or produces results impossible by action of one alone.

**system anthropometry**

A representation of the human body in three-dimensional coordinate space, describing all body links and joint angles.

**system critical**

A single-point failure item or component in a system the loss or failure of which would result in a loss or failure of the entire system.

**system dynamics**

The interactions within a functioning system.

**system engineering**

The application of engineering principles to concept formation, requirements and specifications development, hardware/software design and development, testing, and verification of a system, including all supporting documentation for development and use.

**System for Aiding Man-Machine Interaction Evaluation (SAMMIE)**

An interactive, three-dimensional computer modeling software package for designing the physical aspects of man and workplaces.

**system loss**

Damage to an extent that renders repair impractical. Requires salvage or system replacement.

**system planning**

*Aviation.* Also known as *integrated airport system planning*, it is the initial as well as continuing development for planning purposes of information and guidance to determine the extent, type, nature, location, and timing of airport development needed in a specific area to establish a viable, balanced, and integrated system of public-use airports.

**system response time**

The elapsed time from the signal to begin a command to the notification that the command has been executed.

**system safety**

(1) A sub-discipline of system engineering that applies scientific, engineering, and management principles to ensure adequate safety, the timely identification of hazard risk, and initiation of actions to prevent or control those hazards throughout the life cycle and within the constraints of operational effectiveness, time, and cost. (2) The use of system engineering principles to provide a specified level of safety given the tradeoffs involving cost, time, and the operations involved.

**system safety analysis**

A detailed, systematic method of evaluating the risk of hazard associated with a given system, product, or program. It utilizes a variety of techniques and approaches to accurately identify, resolve, or control exposure to those hazards.

**system safety engineer**

An engineer who is qualified by training, certification, and/or experience to perform system safety engineering tasks.

**system safety engineering**

An engineering discipline requiring specialized professional knowledge and skills in applying scientific and engineering principles, criteria, and techniques to identify and eliminate hazards, or reduce the risk associated with hazards.

**system safety management**

An element of management that defines the system safety program requirements and ensures the planning, implementation, and ac-

complishment of system safety tasks and activities consistent with the overall organizational requirements.

**system safety precedence**

An ordered listing of preferred methods of eliminating or controlling hazards. Typically, it is listed as:

1. Design for no or low hazard risk
2. Implement engineering control
3. Enforce administrative controls
4. Install barriers or warnings
5. Require personal protective equipment
6. Accept or reject risk

**system safety program**

The combination of tasks and activities of system safety management and system safety engineering that enhances operational effectiveness by satisfying the system safety requirements in a timely, cost-effective manner throughout all phases of the system life cycle.

**system safety program objective**

To reduce the risk of a given hazard or set of hazards to its lowest possible level of acceptance (as determined by management) without significant sacrifice of system effectiveness, operating schedules, or cost.

**system safety program plan (SSPP)**

A written description of the planned method of implementing a system safety program in a given organization. It identifies responsibilities, objectives, system safety tasks to be performed, and the method of integrating the program into the organization's overall activities.

**system safety tasks**

Those activities, such as hazard analysis, associated with the system safety engineering discipline that are performed to accomplish the system safety program's objective.

**system security**

(1) *Transit.* All activities associated with providing security to transit patrons and securing transit property, including supervision and clerical support. Includes patrolling revenue vehicles and passenger facilities during revenue operations; patrolling and controlling access to yards, buildings and structures; monitoring security devices; and, reporting security breaches. (2) *Protection Assurance.* The security force, including personnel,

equipment, and all other associated services required to ensure the protection of resources and property.

**system status information**

That information about a system's operating condition which is presented to the user.

**system/subsystem hazard analysis (SHA or SSHA)**

A system safety analytical technique used to evaluate hazards occurring on the subsystem or component level and the effect of their occurrence on overall system operations.

**systematic errors**

Errors introduced by an individual, the result of a poor method/technique, improper reading/recording of data, or from a consistent error in the instrument itself. These do not cancel out if more samples are collected and analyzed and they always cause bias.

**systematic observation**

A non-random, representative, organized program for observing and recording the activities of individuals, systems, or events.

**systematic sampling**

A subject selection procedure in which an ordered population exists and the units sampled are located at fixed or otherwise pre-defined intervals after a random starting point.

**Système International d'Units (SI)**

A metric-based system of weights and measures adopted by many countries, including the U.S.

**systemic**

Relating to the body as a whole.

**systemic circulation**

The flow of blood from the left ventricle through the aorta, carrying oxygen and nutrient material to all the tissues of the body, and returning through the superior and inferior venae cavae to the right atrium.

**systemic effect**

A toxic effect which is remote from the point of contact or site at which the material entered the body. For example, vinyl chloride enters the body by inhalation but affects the liver if a sufficient dose is absorbed by this route. *See also [systemic toxicity](#).*

**systemic pesticide**

A chemical that is taken up from the ground or absorbed through the surface and carried through the system of the organism being protected, making the organism toxic to pests.

**systemic toxicity**

The toxic effect of a chemical exposure at one area in the body, the chemical having entered the body at another point. Also referred to as *systemic effect*.

**systole**

The contraction, or period of contraction, of the heart, especially of the ventricles, during which blood is forced into the aorta and pulmonary artery.

**systolic blood pressure**

The maximum arterial blood pressure during the cardiac cycle, obtained during the heart contraction portion of the cycle.

**systemema**

A cramp in the muscles of the calf of the leg.

# T

## t

(1) Temperature. (2) Tonne.

## t<sup>1/2</sup>

Physical or radiological half-life.

## t distribution

A distribution of sampling means obtained from a normally distributed population and having the probability distribution function (note: approaches the normal distribution as sample size increases)

$$f(t) = G(v) \left[ 1 + \frac{t^2}{v} \right]^{-\frac{(v+1)}{2}}$$

where:

v = number of degrees of freedom

Gv = constant for a given n

## t ratio

The ratio of the quantity of the obtained mean in a sample minus the expected mean, divided by the estimated standard error of the mean.

## t test

A statistical test using the t distribution and t ratio with small sample sizes for determining the significance of differences between means a) of a sample and the population, b) of two independent samples, or c) of two related samples. Usually used for small sample sizes and when the variances are unknown.

## table

(1) A flat-topped furniture piece having small leg-like structures for support and on which one or more functions (such as dining, games, or work) are carried out. (2) A structure generally containing rows and columns of information or data which are related and uniquely identified.

## tablespoon (tbsp.)

A measure of volume used primarily in cooking, corresponding to the level by volume held in a large spoon or about 14.8 ml.

## tabular display

A display consisting of alphanumeric data, words, and/or other symbols in a table format.

## TACAN

See *Tactical Air Navigation*.

## tachistoscope

An instrument for presenting time-controlled exposures of visual stimuli.

## tachometer

A device for determining rotational speed.

## tachycardia

Excessive rapidity in the action of the heart (i.e., a rapid heart rate).

## tachypnea

An abnormally high respiration rate.

## tack

Short for *tachograph* or *tachometer*.

## Tactical Air Navigation (TACAN)

A relatively short-range radio frequency aerial navigation system.

## tactical communications

*Aviation*. Communications that are developed and delivered as part of the real-time ATM process.

## tactile

Pertaining to the sense of touch, mediated by sensors located in the skin.

## tactile coding

The use of vibratory mechanical stimuli for communicating purposes.

## tactile control

Having the possibility of control through some type of tactile feedback, usually via a distinctive surface texture, vibration, or a stop.

## tactile stimulus

Any mechanical stimulus which activates the touch/pressure receptors.

## tactual

Causing a touch sensation.

## Taft-Hartley Act

The Wagner Act was amended in 1947 by the Taft-Hartley Act to balance some of the advantages given to unions under the Wagner Act by imposing corresponding duties on unions. Principal changes imposed by the Act included the following: abolishment of the closed shop (but permitting the *union shop* under conditions specified in the Act); exempting supervisors from coverage of the Act; requiring the National Labor Relations Board (NLRB) to accord equal treatment to both independent and affiliated unions; per-

mitting the employer to file a representation petition even though only one union seeks to represent the employees; granting employees the right not only to organize and bargain collectively but also to refrain from such activities; permitting employees to file decertification petitions for elections to determine whether or not employees desire to revoke a union's designation as their bargaining agent; declaring certain activities engaged in by the unions to be unfair labor practices; giving to employers, employees, and unions new guarantees of the right of free speech; providing for settlement by the NLRB of certain jurisdictional disputes; vested in the General Counsel, rather than in the Board, the authority to investigate and prosecute unfair labor practices.

**tag**

The official U.S. Government motor vehicle license plate, District of Columbia license plate, or license plate of any State, Territory, or possession of the United States.

**tag axle**

A nonpowered vehicle axle that helps distribute the load.

**tagout device**

A prominent warning device that is capable of being securely attached to equipment start-up devices and that, for the purpose of protecting personnel, forbids the operation of an energy-isolating device and identifies the person who has applied the tag or the authority who has control of the procedure.

**taiga**

The open northern part of the coniferous forest. Taiga also refers to the subarctic climate. Also referred to as the *boreal forest*.

**tail lamps**

Lamps used to designate the rear of a motor vehicle.

**tailboard artist**

*Transit (slang)*. One who thinks he/she is a perfect driver.

**tailbone**

*(slang)*. The sacral vertebrae of the spine.

**tailgate**

(1) *Refining*. The outlet of a natural gas processing plant where dry residue gas is delivered or redelivered for sale or transportation. (2) *Maritime Operations*. A gate located at the

downstream of a lock in the tailwater of a dam. Also called lower lock gate. (3) *Automotive Design*. The horizontal hinged door or "gate" located at the rear of the bed of a pickup truck.

**tailgating**

The act of driving too closely behind the vehicle ahead.

**tailings**

(1) Under the Federal Uranium Mill Tailings Radiation Control Act of 1978: The remaining portion of a metal-bearing ore after some or all of such material, such as uranium, has been extracted. (2) Residue of raw materials or waste separated out during the processing of crops or mineral ores.

**tailings closure plan**

As pertains to radon: The Nuclear Regulatory Commission (NRC) or state-approved agreement plan detailing activities to accomplish timely emplacement of a permanent radon barrier. A tailings closure plan shall include a schedule for key radon closure milestone activities such as wind-blown tailings, retrieval and placement on the pile, interim stabilization (including dehydration or removal of freestanding liquids and recontouring), and emplacement of a permanent radon barrier constructed to achieve compliance with the 20 pCi/m<sup>2</sup>-s flux standard as expeditiously as practicable considering technological feasibility.

**tailor's ankle**

A growth over the lateral malleolus commonly found in tailors. Generally caused by pressure from sitting on hard surfaces with crossed legs.

**tailwater**

A term to indicate the depth of water above pool stage immediately below a dam when that dam is passing water in a nonsufficient amount to raise the stage of the water immediately below the dam. A term used primarily in the Upper Mississippi River area.

**tainter gate**

A large gate used to control the flow of water through or over a dam; such gates have a cylindrical surface with the convex side facing upstream.

**takeoff distance available (TODA)**

The runway length available for takeoff plus the length of any remaining runway and/or clearway beyond the far end.

**takeoff power**

(1) With respect to reciprocating engines, means the brake horsepower that is developed under standard sea level conditions, and under the maximum conditions of crankshaft rotational speed and engine manifold pressure approved for the normal takeoff, and limited in continuous use to the period of time shown in the approved engine specification. (2) With respect to turbine engines, means the brake horsepower that is developed under static conditions at a specified altitude and atmospheric temperature, and under the maximum conditions of rotor shaft rotational speed and gas temperature approved for the normal takeoff, and limited in continuous use to the period of time shown in the approved engine specification.

**takeoff run available (TORA)**

The runway length declared available and suitable for the ground run of an airplane taking off.

**takeoff safety**

A referenced airspeed obtained after liftoff at which the required one-engine-inoperative climb performance can be achieved.

**takeoff thrust**

With respect to turbine engines, means the jet thrust that is developed under static conditions at a specific altitude and atmospheric temperature under the maximum conditions of rotor shaft rotational speed and gas temperature approved for the normal takeoff, and limited in continuous use to the period of time shown in the approved engine specification.

**taking the fifth**

The practice of witnesses or suspects in refusing to answer a question because of the Fifth Amendment right in the U.S. Constitution to refuse to furnish information implicating one's self in a crime. Synonymous with *pleading the fifth*. See also *Fifth Amendment* and *self-incrimination*.

**Talbot**

An SI unit for that amount of light delivered by a luminous flux in one second.

**talc**

A hydrated magnesium silicate material similar in chemical composition to asbestos. It is generally a flaky mineral material but may also be fibrous. Some talc products contain asbestos in small amounts.

**talcosis**

A pneumoconiosis resulting from the prolonged inhalation of talc dust.

**talent**

A greater than normal ability, especially pertaining to the arts or sports.

**talus**

(1) *Anatomy*. The most superior bone of the foot, which articulates with the bones of the lower leg to form the primary aspect of the ankle joint. Commonly referred to as the *ankle bone*. (2) *Geology*. Slopes of broken rock debris on a mountainside.

**tandem**

Semitrailer or tractor with two rear axles. See also *dual drive tandem*.

**tandem axle**

Two axles operated from a single suspension.

**tandem axle weight**

The total weight transmitted to the road by two or more consecutive axles whose centers may be included between parallel transverse vertical planes spaced more than 40 inches and not more than 96 inches apart, extending across the full width of the vehicle. The federal tandem axle weight limit on the interstate system is 34,000 pounds.

**tandem gait**

A type of gait in which the individual places the heel of the advancing foot in line with and directly in front of the toes of the stationary foot.

**tandem wing**

A configuration having two wings of similar span, mounted in tandem.

**tangent**

A trigonometric function; equal to the value of the ratio of the opposite side of a right triangle to the adjacent side.

**tangible evidence**

Evidence which consists of something which can be seen or touched (e.g., a gun in a homi-



side trial). In contrast to testimonial evidence, tangible evidence is real evidence.

**tank**

A structure used for the storage of fluids.

**tank barge**

*Maritime Operations.* A large, flat-bottomed, non-self-propelled, compartmented, decked-over barge used for all types of liquid cargo (petroleum, molasses, chemicals, etc.).

**tank car**

A railroad car consisting of a large cylindrical container attached to the railcar truck and used to transport liquids in bulk.

**tank farm**

An installation used by gathering and trunk pipeline companies, crude oil producers, and terminal operators (except refineries) to store crude oil.

**tank vehicle**

Any commercial motor vehicle that is designed to transport any liquid or gaseous materials within a tank that is either permanently or temporarily attached to the vehicle or the chassis. Such vehicles include, but are not limited to, cargo tanks and portable tanks, as defined in 49 CFR 171. However, this definition does not include portable tanks having a rated capacity under 1,000 gallons.

**tanker**

(1) *Transportation.* Truck, semitrailer, or trailer with a tank body for hauling liquids. (2) *Maritime Operations.* An oceangoing ship specially designed to haul liquid bulk cargo in world trade. *See also barge.*

**tanker man**

Person trained, qualified, and certified to supervise transfer of liquid cargo (fuels) from shore to the barge.

**tannic acid**

A substance obtained from bark and fruit of many plants; used as an astringent.

**tapeworms**

Any of a number of parasites of the phylum Platyhelminthes (flatworms) that lodge in the intestines of animals and human beings. They are transmitted to man in larval form, embedded cysts, or in meat or fish that is not properly cooked. In the human, they develop to maturity and attach themselves to the wall of

the intestine, where they grow and release eggs. Although a large number of adult tapeworms are considered human parasites, only a few infect man to a great degree.

**tapotement**

The use of percussion movements in the administration of massage.

**tar**

A dark, viscid substance obtained from wood of different trees or from bituminous coal.

**tar sand**

Sandstone that contains very heavy, tar-like hydrocarbons.

**tar warts**

A type of industrial dermatitis caused by exposure to tar or products containing tar or its constituents. *See also industrial dermatitis.*

**tare weight**

The weight of a container, liner, wrapper, or sampling media (e.g., a filter) before sampling through it, which is deducted from the final weight to determine the net weight of a collected material (e.g., particulates collected on a filter during sampling).

**target**

(1) Any object which is capable of reflecting a sufficient amount of a transmitted sonar or radar signal to produce a blip on detection/display equipment. (2) Any object, point, or other entity toward which an object, activity, or energy is directed.

**target acquisition**

The first appearance of an echo on a radar or sonar tracking system.

**target compound list (TCL)**

Developed by EPA for Superfund site sample analysis. The TCL is a list of analytes (thirty-four volatile organic chemicals, sixty-five semi-volatile organic chemicals, nineteen pesticides, seven polychlorinated biphenyls, twenty-three metals, and total cyanide) for which every Superfund sample must be analyzed.

**target discrimination**

The ability of a system to distinguish one or more targets within a noisy background.

**target distance limit**

The maximum distance over which targets for the site are evaluated. The target distance

limit varies by Hazard Ranking System pathway.

**target gland**

Any gland affected directly by a hormone released from another gland or tissue.

**target organ**

Part of the body. A specific organ, such as the eyes, lung, central nervous system, liver, or kidney, invaded by a chemical, affecting the organ or causing injury. For example, ethanol, when ingested, affects the brain and liver.

**target scintillation**

See *wander*.

**target witness**

A person whose testimony an investigating body is principally seeking as in the case of a grand jury which has, as its objective, obtaining the information which such a person may give.

**tariff**

(1) A published volume of rate schedules and general terms and conditions under which a product or service will be supplied. (2) The charges, rates, and rules of transportation companies usually set forth in an industry publication.

**tarp**

Tarpaulin cover for open top trailers.

**tarsus**

(1) The group of bones in the posterior foot, consisting of the talus, calcaneus, cuboid, navicular, and the three cuneiform bones. (2) A plate of dense connective tissue which gives form and some rigidity to each of the eyelids.

**tartar**

(1) The recrystallized sediment of wine casks; crude potassium bitartrate. (2) A yellowish film formed of calcium phosphate and carbonate, food particles, and other organic matter, deposited on the teeth by the saliva. Also called *dental calculus*.

**task**

A logical, describable group of related sub-tasks which comprise a discrete component of a job and which are performed within a job classification.

**task allocation**

The distribution of task elements between workers and machines.

**task analysis**

An expansion of the job safety analysis (JSA) method of identifying hazards associated with a given job or task. Differs from the JSA in its level of specific detail and consideration of the human interface in all aspects of the job performance. See also *job safety analysis*.

**task assumption**

Any of a set of background or unstated ideas or concepts which underlie the performance of a task.

**task complexity**

A measure of or statement about the number, variety, and difficulty of the separate task elements making up a task.

**task description**

A written statement providing an overall label and a label for each of the task elements which must be performed to carry out a given task.

**task element**

The smallest work unit into which a task may be logically divided, typically comprised of several therbligs.

**task element time**

The time interval required to complete a task element.

**task frequency**

The number of times a task is/must be performed within a given time period.

**task hierarchy**

A description of the manner in which lower level tasks are organized to form more complex tasks.

**task inventory**

A listing of the tasks performed or required for a given occupation.

**task lighting**

That illumination which is directed onto a localized workplace for a specific visual task.

**Task Load Index (TLX)**

A subjective rating technique developed by NASA for determining overall workload, and consisting of six dimensions (mental, physical, and temporal demands, effort, perceived performance, and frustration level), which are rated on the basis of low to high.

**task needs analysis**

A determination of those tasks forming part of some function which an individual or group wishes to perform.

**task rating**

A subjective rating of tasks using a relevant set of work habitability criteria.

**task time**

The time interval allowed or required to complete a given task. Synonymous with *task duration*.

**taste**

A chemical sense involving the stimulation of sensory receptors located in the tongue and oropharynx for the four basic sensations of sweetness, saltiness, sourness, and bitterness. The organs of taste are the taste buds, bundles of slender cells with hair-like branches that are packed together in groups that form the projections called papillae at various places on the tongue. When a substance is introduced into the mouth, its molecules enter the pores of the papillae and stimulate the taste buds directly. In order to do this, the substance has to be dissolved in liquid. If it is not liquid when it enters the mouth, then it melts or is chewed and becomes mixed with saliva.

**taste blindness**

See *ageusia*.

**taste bud**

An ovoid-shaped structure embedded just below the surface of the tongue which contains the sensory receptors for taste.

**tasteless**

A characteristic of a substance in which it does not stimulate buds above threshold levels.

**taxi**

(1) *Transit*. The use of a taxicab by a driver for hire or by a passenger for fare. Also includes airport limousines. Does not include rental cars if they are privately operated and not picking up passengers in return for fare. (2) *Aviation*. The act of driving an aircraft to or from the runway or takeoff/landing area.

**taxicabs**

Establishments primarily engaged in furnishing passenger transportation by automobiles not operated on a regular schedule or between fixed terminals. Taxicab fleet owners and organizations are included, regardless of

whether drivers are hired or rent their cabs or are otherwise compensated.

**taxilane (TL)**

The portion of the aircraft parking area used for access between taxiways and aircraft parking positions.

**taximeter**

A mechanical or electrical device in a taxicab that records and indicates a charge or fare calculated according to distance traveled, waiting time, initial charge, number of passengers, and other charges authorized by ordinance or by rule. Some taximeters are part of electronic dispatching systems.

**taxiway (TW)**

A defined path established for the taxiing of aircraft from one part of an airport to another.

**taxiway safety area (TSA)**

The surface alongside the taxiway prepared or suitable for reducing the risk of damage to an airplane unintentionally departing the taxiway.

**taxon**

A classification within a taxonomy. A particular category into which living organisms are classified on the basis of certain common features, as species, genus, family, order, or class.

**taxonomy**

An organizational structure for classification and description purposes.

**tb**

Biological half-life.

**TBF**

See *total body fat*.

**TBS**

See *tight building syndrome*.

**tbsp.**

See *tablespoon*.

**TBT**

See *total bottom time*.

**TBT paint**

See *organotin*.

**TC**

Thermal conductivity.

**TC detector**

See *thermal conductivity detector*.

**TCAS**

See *traffic alert and collision avoidance, type I system*.

**TCD**

Thermal conductivity detector.

**TCE**

See *trichloroethylene*.

**Tcf**

Trillion cubic feet.

**TCL**

See *target compound list*.

**TCLP**

See *toxic characteristic leaching procedure*.

**teach**

To provide knowledge, information, and/or concepts.

**tear strength**

That force required to initiate a tear in a fabric or sheet of material.

**teardown**

The process of partial or total dismantling of a facility or workplace to prepare for another job which uses the same facility or workplace.

**teardown allowance**

The teardown time applied as a special time allowance for a worker who performs a teardown operation. Also referred to as *dismantling allowance*. See also *changeover allowance*.

**teaspoon**

A volume of approximately 5 cc or 1/3 tablespoon.

**technical**

Belonging or peculiar to an art or profession.

**technical errors**

Errors committed in the course of a trial which have not prejudiced the party and hence are not grounds for reversal.

**technical factory visit**

*U.S. Coast Guard*. A visit of officer in charge of marine inspection (OCMI) personnel to a manufacturing facility to check for compliance with standards and regulations, examine products, and answer technical questions.

**technical mel scale**

A scale of subjective auditory perceptual sensitivity, which is an approximately linear function to 1 kHz, and logarithmic above 1 kHz.

**technician**

A person skilled in the performance of technical procedures.

**Technique for Human Error Rate Prediction (THERP)**

A procedure for applying tables consisting of human reliability estimates for certain steps in the analysis of tasks to determine the probable overall likelihood of a successful outcome.

**technological forecasting**

The process of gathering and analyzing data in an attempt to predict the types and characteristics of future equipment and technologies.

**technological system of continuous emission reduction**

Clean Air Act: A technological process for production or operation by any source which is inherently low-polluting or nonpolluting or a technological system for continuous reduction of the pollution generated by a source before such pollution is emitted into the ambient air, including pre-combustion cleaning or treatment of fuels.

**technology-based limits**

As pertains to water pollution control: The minimum level of water pollution control technology that a discharger must apply regardless of which water body receives the effluent discharges.

**technology-based standards**

Effluent limitations applicable to direct and indirect sources which are developed on a category-by-category basis using statutory factors, not including water-quality effects.

**technology transfer**

Those activities that lead to the adoption of a new technique or product by users and involve dissemination, demonstration, training, and other activities that lead to eventual innovation.

**TECP suit**

Totally encapsulated chemical protective suit. See also *SCAPE*.

**tectorial membrane**

That gelatinous membrane overlying the hair cells of the organ of Corti in the cochlea.

**TEKTITE**

A program conducted in the early 1970s involving two studies (I and II) in which people lived for up to 30 days in an underwater chamber.

**tele-**

(*prefix*). At a distance.

**teleceptor**

Any sensory receptor sensitive to stimuli of distant or remote origin.

**telemetry**

The transmission of data collected at a location over communication channels to a central station.

**teleoperation**

The use and control of a teleoperator or telerobot, usually involving either a hardwired connection or communication using the electromagnetic spectrum, with a video display for the operator.

**teleoperator**

A general-purpose, dexterous device capable of sensing its environment and of direct, essentially real-time control by a human operator to perform tasks like grasping, moving, and other operations using its appendages.

**teleopsia**

A visual perception disorder in which depth is not judged correctly.

**telepresence**

A condition in which the operator of a remote system is provided with sensory information and/or feedback regarding the operation of that remote system.

**telepuppet**

An older term. See *telerobot*.

**telerobot**

A remote, dexterous manipulator device capable of self-locomotion and preprogramming for periods of autonomous operation.

**telescience**

The direction of an individual using teleoperation to perform scientific research remotely via video or other telecommunication means.

**teleseismic**

An adjective to refer to earthquakes, and any properties thereof, that occur more than 100 km from a particular site. In this age of modern seismic data-recording networks, this translates to more than 100 km from the nearest operational station in that network.

**telestereoscope**

An instrument which effectively increases the interpupillary distance to produce the appearance of exaggerated depth.

**TEM**

See *transmission electron microscope*.

**temper**

A disposition toward a sudden display of anger or hostility.

**temperature**

A measure of the relative "hotness" or "coldness" of any object or system. In the International System of Units, the basic unit of temperature is the *degree Kelvin* which, as the unit of thermodynamic temperature, is a fraction (specifically, 1/273.16) of the thermodynamic temperature of the triple point of water. Quantification of this parameter commonly occurs using either an absolute or a relative system of measurement. In both the MKS and the CGS Systems, the basic unit of temperature is the *degree Kelvin* or the *degree Celsius*. The magnitudes of these two units are identical, i.e., a temperature difference between two states or conditions would have the identical numerical magnitude, whether expressed in *degrees Kelvin* or *degrees Celsius*. A temperature of 0° Kelvin, or 0°K, has been defined to be Absolute Zero; thus the Kelvin Scale is the absolute scale for these two systems. A temperature of 0° Celsius, or 0°C, is the temperature at which water freezes; thus the Celsius Scale is the relative scale for these two Systems of Units. Note that 273.16°K = 0°C. In the English System, the basic unit of temperature is the *degree Fahrenheit* or the *degree Rankine*; as was the case with relative and absolute units of measure in the MKS & CGS Systems, the magnitudes of these two English System units are also identical; i.e., a temperature difference between two states or conditions would have the identical numerical magnitude, whether expressed in *degrees Fahrenheit* or *degrees Rankine*. A temperature of 0° Rankine, or 0°R, has been defined to be Absolute Zero;

thus the Rankine Scale is the absolute scale for the English System. A temperature of 32° Fahrenheit, or 32°F, is the temperature at which water freezes; thus the Fahrenheit Scale is the relative temperature scale for the English System. Note that  $459.67^{\circ}\text{R} = 32^{\circ}\text{F}$ .

**temperature color scale**

See *color temperature scale*.

**temperature effect**

In sampling, the effect of air temperature on the response of an instrument to a contaminant/stress factor being measured, or the effect of temperature on the absorption or adsorption of a contaminant by a collecting media. Typically, effects are greatest at temperature extremes, such as below 0°C and above about 40°C.

**temperature gradient**

The rate of change of temperature with displacement in a given direction.

**temperature inversion**

Vertical temperature distribution such that temperature increases with height above the ground.

**temperature sense**

The ability to detect relative heat and cold.

**tempered air**

See *conditioned air*.

**temple**

That portion of the head anterior to the pinna and superior to the zygomatic arch.

**temporal**

(1) Pertaining to the lateral direction of the head or skull, as opposed to nasal or medial (i.e., toward the temporal or the temporal bone). (2) Pertaining to time.

**temporal bone**

A flat bone located on the inferior lateral portion of the skull.

**temporal crest**

A narrow bony ridge comprising the posterior extension of the zygomatic arch as part of the temporal bone on the side of the head above the ear.

**temporal lobe**

That portion of the cerebrum which is located on the lower lateral region of the cerebral hemisphere.

**temporal muscle**

That muscle located over the temporal bone region of the skull.

**temporal pole**

The inferior and anterior projecting portion of the temporal lobe.

**temporal summation**

The additive effect over time of multiple sub-threshold neural inputs, with each subsequent input occurring before the previous potential has returned to baseline.

**temporary damages**

Damages allowed for intermittent and occasional wrongs, such as injuries to real estate, where cause thereof is removable or abatable.

**temporary disability**

A healing period during which the claimant is totally or partially unable to work due to injury, and continues as long as recovery or lasting improvement of the injured person's condition can reasonably be expected.

**temporary editing buffer**

See *clipboard*.

**temporary rate**

A production output rate or incentive wage rate based on a temporary standard.

**temporary standard**

A standard time or output measure to be used for a limited period, generally to allow for an unusual job situation, revising a task, or developing a new task.

**temporary swap file**

*Computing.* Windows creates this type of swap file each time the user starts Windows and deletes it each time the user quits Windows. The advantage of a temporary swap file is that the user has more free disk space when Windows is not running. The drawback is that a temporary swap file is not as fast as a permanent swap file, and its size shrinks as the free space on the hard drive decreases. A temporary swap file is the only type that can be placed on a compressed drive. See also *swap file* and *permanent swap file*.

**temporary threshold shift**

*Acoustics.* A temporary impairment of hearing ability as indicated by an increase in the threshold of audibility.



**temporary total disability**

An injury classification in which, for some limited period of time subsequent to an injury, an individual cannot perform the normal duties of one's job.

**temporary variance**

Essentially, permission is granted for an employer to operate under limited conditions of noncompliance with a specific standard for a limited period of time.

**temporary work**

That work performed for a short term, without any agreement by the parties involved of long-term or permanent employment.

**temporomandibular joint (TMJ) disorder**

A condition involving the joint between the temporal and mandibular bones in the jaw which may cause symptoms of tooth, jaw, ear pain, or headache. Also called *temporomandibular joint syndrome*.

**temporo-parietal**

Pertaining to or toward the side of the skull or head, or the junction between the temporal and parietal bones.

**tendon**

A tough connective tissue, often in the shape of a cord, which provides a junction between muscle and bone. When the muscle contracts, or shortens, it pulls on the tendon, which moves the bone. Tendons are so tough, they are seldom torn, even when an injury is severe enough to break a bone or tear a muscle. One of the most prominent tendons is the Achilles tendon, which can be felt at the back of the ankle just above the heel; it attaches the triceps surae muscle to the calcaneus.

**tendon reflex**

The contraction of a muscle due to the tapping of its tendon.

**tendonitis**

An inflammation of a tendon. It is one of the most common causes of acute pain in the shoulder. Tendonitis is frequently associated with a calcium deposit (calcific tendonitis), which may also involve the bursa around the tendon or near the joint, causing bursitis. Sometimes spelled *tendinitis*. See also *tenosynovitis*.

**Tennessee Valley Authority (TVA)**

A government-owned corporation that conducts a unified program of resource development for the advancement of economic growth in the Tennessee Valley region. The Authority's program of activities includes flood control, navigation development, electric power production, fertilizer development, recreation improvement, and forestry and wildlife development. While its power program is financially self-supporting, other programs are financed primarily by appropriations from Congress.

**tennis elbow**

An inflammatory condition in the lateral elbow region, especially at the origin of the wrist extensor muscles on the humerus. See also *epicondylitis*.

**tenosynovitis**

A cumulative trauma disorder (CTD) of the tendon produced by a swelling of the synovial sheath which surrounds it. The surfaces of the tendon become irritated, rough, and bumpy, and movement is impeded. Often related to long-term exposure to repetitive motion, inappropriate posture, or positioning of machinery, or exposure to vibration from equipment. Tenosynovitis occurs most frequently in the hands and wrists or feet and ankles, and is often the result of intense and continued use. It can be quite painful and may temporarily disable the affected part.

**TENS**

See *transcutaneous electrical nerve stimulation*.

**tensile strength**

That maximum stress to which a material can be exposed prior to breaking or tearing.

**tensiometer**

A mechanical spring-type device for measuring static strength.

**tension**

Internal stress created in a material by forces acting outward in opposite directions, pulling in a manner to cause extension or stretching of the material, expanding its molecular structure.

**tension headache**

A headache caused primarily by prolonged contraction of the scalp muscles.

**tension movement**

See *controlled movement*.

**tensor**

Any muscle which makes a portion of the body more rigid.

**Tenth Amendment**

An Amendment to the U.S. Constitution (1791) which provides that the powers not delegated to the federal government are reserved to the states or to the people.

**tentorium**

That portion of the dura mater which separates the cerebral hemispheres from the cerebellum.

**tera**

Prefix designating  $10^{12}$ .

**TERA**

See *TSCA Experimental Release Application*.

**teratogen**

Substance that causes malformation or serious deviation from the normal development of an embryo or fetus. The result may include fetal or embryonic mortality or in the birth of offspring with defects.

**teratogenesis**

The process whereby abnormalities of the offspring are generated, usually as the result of damage to the embryo structure during the first trimester of pregnancy, producing deformity of the fetus.

**teratogenicity**

The ability of a chemical to cause a change in the normal development processes of an unborn organism, resulting in permanent alterations in the biochemical, physiological, or anatomical functions of the organism.

**teratoma**

A tumor made up of a number of different types of tissue, none of which is native to the area in which it occurs. A growth containing cellular elements derived from more than one primary germ layer.

**terawatt hour (TWH)**

One trillion watt hours.

**terminal**

(1) *Transit*. Any location where freight either originates, terminates, or is handled in the transportation process; or where commercial motor carriers maintain operating facilities.

(2) *Maritime*. Any facility on the inland system designed for on-loading or off-loading of barges. (3) *Aviation*. An ending point for aircraft operations. Also, a location where passengers can access aircraft through a secure, orderly, and controlled process.



*Most modern airport terminal facilities offer more than just safe access to aircraft. Many are equipped with restaurants, shopping facilities, even hotels.*

**terminal and joint terminal maintenance for motor freight transport facility**

Establishments primarily engaged in the operation of terminal facilities used by highway-type property-carrying vehicles. Also included are terminals which provide maintenance and service for motor vehicles.

**terminal and service for motor vehicle passenger transportation facility**

Establishments primarily engaged in the operation of motor vehicle passenger terminals and of maintenance and service facilities, not operated by companies that also furnish motor vehicle passenger transportation.

**terminal area**

A general term used to describe airspace in which approach control service or airport traffic control service is provided.

**terminal area facility**

A facility providing air traffic control service for arriving and departing instrument flight rule (IFR), visual flight rule (VFR), special visual flight rules (VFR), special instrument flight rules (IFR) aircraft and, on occasion, en route aircraft.

**terminal facility activity**

The sum of total airport operations + total instrument operations which equals local operations + itinerant operations + primary in-

strument operations + secondary instrument operations + instrument overflights.

**terminal radar approach control (TRACON)**

A Federal Aviation Administration (FAA) air traffic control facility using radar and air/ground communications to provide approach control services to aircraft arriving, departing, or transiting the airspace controlled by the facility. Service may be provided to both civil and military airports.

**terminal storage**

Service of providing warehouse or other terminal facilities for the storage of inbound or outbound cargo after the expiration of free time, including wharf storage, shipside storage, closed or covered storage, open or ground storage, bonded storage, and refrigerated storage.

**terminal threshold**

See *upper threshold*.

**terminal velocity**

The constant speed obtained by a falling object when the upward drag on the object balances the downward force of gravity. See also *settling velocity*.

**terminated carload**

*Rail Operations*. A carload which ends its journey and is unloaded on a particular railroad.

**terrace**

A step-like feature between higher and lower ground; a relatively flat or gently inclined shelf of earth, backed and fronted by steep slopes or manmade retaining walls.

**terracing**

Dikes, built along the contour of sloping agricultural land, to hold runoff and sediment to reduce erosion.

**terrestrial life cycle safe concentration (TLSC)**

A value representing the concentration of a substance which does not cause a significant decrease in growth, reproduction, survival, or usefulness of a terrestrial animal (i.e., living on land).

**territorial highway system (THS)**

The full name is Federal-aid Territorial Highway System. A system of arterial and collector highways, plus inter-island connectors that are established under 23 U.S.C. 215 by

each territory (Guam, Northern Marianas Islands, Samoa, and the Virgin Islands).

**territorial seas**

The belt of the seas measured from the line of ordinary low water along that portion of the coast which is in direct contact with the open sea and the line marking the seaward limit of inland waters and extending seaward a distance of three miles.

**territorial waters**

That part of the sea adjacent to the coast of a given country which is by international law deemed to be within the sovereignty of that country, so that its courts have jurisdiction over offenses committed on those waters, even by a person on board a foreign ship. See also *three-mile limit*.

**territoriality**

The concept that an individual has a physical location or personal space that belongs to him/her, and resists or resents the entry of another person into that space.

**tertiary treatment**

Advanced cleaning of wastewater that goes beyond the secondary or biological stage. It removes nutrients such as phosphorus and nitrogen and most BOD and suspended solids.

**tesla**

The unit of magnetic flux density in the International System equal to 1 weber per square meter.

**test**

To carry out a technique or procedure for determining a quantity or performance measure on one or more dimensions for an individual or product.

**test and evaluation facility**

Under the Federal Nuclear Waste Policy Act of 1982: An at-depth, prototypic, underground cavity with subsurface lateral excavations extending from a central shaft that is used for research and development purposes, including the development of data and experience for the safe handling and disposal of solidified high-level radioactive waste, transuranic waste, or spent nuclear fuel.

**test battery**

A group of tests administered to one or more individuals to obtain a total or composite

score for evaluation with regard to some fitness or aptitude.

**test conditions**

The total circumstances or environment under which an individual, part, or system is tested.

**test gas**

A gaseous contaminant that has been diluted with clean air (or nitrogen in some cases) to a known concentration.

**test procedures**

Specifies the methods and equipment the U.S. Coast Guard uses in determining whether boats comply with applicable standards.

**test-retest reliability**

A measure of the consistency obtained in repeated administrations of the same test to the same group, separated by some time interval. Represented by the correlation coefficient between performances on the test.

**testify**

To bear witness or to give evidence as a witness. To make a solemn declaration, under oath or affirmation, in a judicial inquiry, for the purpose of establishing or proving some fact.

**testimony**

Evidence given by a competent witness under oath or affirmation; as distinguished from evidence derived from writings, and other sources.

**testing**

As pertains to confined space entry, the process by which the hazards that may confront entrants of a permit space are identified and evaluated. Testing includes specifying the tests that are to be performed in the permit space. Testing enables employers to devise and implement adequate control measures for the protection of authorized entrants and to determine if acceptable entry conditions are present immediately prior to and during entry.

**testis**

The ovoid-shaped male gland in the scrotum which produces sperm. Commonly referred to as *testicle*.

**tetanus**

An acute, often fatal infection, caused by a bacillus that generally enters the body through

a wound. The disease is characterized by rigidity and spasmodic contractions of voluntary muscles.

**tex**

A unit of measure for the fineness of a fiber, represented by the weight of 100 meters of thread in grams.

**Texas norther**

A strong, cold wind from between the northeast and northwest associated with a cold outbreak of polar air that brings a sudden drop in temperature.

**text**

Any combination of alphanumeric character strings, usually having a structure comprised of words, sentences, and paragraphs.

**text entry**

The process of inputting text to a computer through whatever method.

**text processing**

One or more of the following acts: text entry, text retrieval or storage, text editing, printing, or similar actions performed in the production of text materials.

**text-to-speech system**

A speech synthesis device in which text and small speech units are processed to yield sounds approximating human speech.

**textile**

Any material made from either manmade or synthetic fibers and intended for use in clothing, furniture coverings, or carpets.

**textile softener**

*See fabric softener.*

**thalamus**

Either of two large ovoid structures composed of gray matter and situated at the base of the cerebrum. The thalamus functions as a relay station in which sensory pathways of the spinal cord and brain stem form synapses on their way to the cerebral cortex. Specific locations in the thalamus are related to specific areas on the body surface and in the cerebral cortex. A sensory impulse from the body surface travels upward to the thalamus, where it is received as a primitive sensation and then is sent on to the cerebral cortex for interpretation as to location, character, and duration. The thalamus has numerous connections to

other areas of the brain as well, and these are thought to be important in the integration of cerebral, cerebellar, and brain stem activity.

**thalweg**

The deepest water at any point in the river. The longitudinal line of greatest continuous depth in the river channel.

**Thanksgiving rise**

An annual event on the Ohio River when the river swells to a crest around Thanksgiving time.

**then on down**

Channel report term written as proceeding to a designated mile or designated bank, then on down to the end of another designated location, such as "fourth dike below this light."

**thenar**

Pertaining to the thenar eminence.

**thenar eminence**

The protrusion on the radial/lateral side of the palm near the base of the thumb due to the underlying mass of muscle tissue.

**theodolite**

An instrument used to track the movements of a pilot balloon.

**theoretical biomechanics**

The use of knowledge from classical mechanics and the life sciences to generate models which predict the relationship of man, his body segments, or tissues to a particular biomechanical environment.

**theoretical air**

The quantity of air, calculated from the chemical composition of the material to be combusted, that is required to burn it completely.

**theory**

A concept based generally on accepted principles and which uses standard rules to predict or otherwise explain certain phenomena.

**Theory X**

A belief that workers are naturally passive, self-centered, require constant motivation, lack ambition, resist change, and that management must operate by active intervention.

**Theory Y**

A belief that motivation, responsibility, and a willingness to work as a team member are human characteristics which would surface

under the right conditions, as provided by management.

**therapeutic index**

The value of the ratio of the median lethal dose of a drug to its therapeutic dose.

**therapist**

One who practices a therapeutic technique.

**therapy**

A technique intended to produce a cure or assist in managing a disability or disease.

**therblig**

A specific fundamental division of mental, sensory-motor activity, or the lack of activity, within a larger task. Named by Frank B. and Lillian Gilbreth. Therbligs are

- assemble
- avoidable delay
- disassemble
- grasp
- hold
- inspect
- plan
- position
- pre-position
- release load
- rest
- search
- select
- transport empty
- transport loaded
- unavoidable delay
- use

Also referred to as *basic division of work*, *basic division of accomplishment*, *Gilbreth basic element*, *elemental motion*, *fundamental motion*, *basic motion*, *basic element*, and *work element*.

**therblig chart**

An operation chart subdivided into therbligs, with each therblig designated by its appropriate symbol or abbreviation. See also *simultaneous motion chart* and *therblig*.

**therm**

A measure of heat content equal to 100,000 Btu.

**thermal**

A small, rising parcel of warm air produced when the earth's surface is heated unevenly.

**thermal adaptation**

The physiological adjustment of the body over time to cold or heat.

**thermal analysis**

The measurement of changes in properties (physical or chemical) of materials as a function of temperature change, usually brought about by heating or cooling at a uniform rate.

**thermal belts**

Horizontal zones of vegetation found in mountainous regions that are primarily the result of vertical temperature variations.

**thermal circulation**

Air flow resulting primarily from the heating and cooling of air.

**thermal comfort**

Satisfaction with the thermal environment.

**thermal comfort zone**

That range of dry bulb air temperature, mean radiant temperature, air velocity, and humidity within which some specified percentage of people are expected to be satisfied indefinitely when in a sedentary posture with suitable clothing.

**thermal conductivity detector**

A detector that measures the specific heat of conductance as a quantitative means to determine the concentration of a substance (TC detector).

**thermal decomposition**

A chemical breakdown of a material as a result of exposure to heat. The decomposition products are often more toxic than the parent material.

**thermal discomfort**

That sensation of being outside the thermal comfort zone, but not to the extent at which the body would encounter significant thermal stress.

**thermal environment**

The total combination of dry-bulb temperature, radiant temperature, air velocity, humidity, physical activity, and clothing effects for an individual or group.

**thermal equilibrium**

(1) A condition in which the rate of excess body heat production equals the rate of heat loss to the environment. (2) A condition in which all objects in contact with each other or

within the same closed thermal environment have the same temperature.

**thermal high**

Area of high pressure that is shallow in vertical extent and is produced primarily by surface temperatures. *See also thermal low.*

**thermal indifference zone**

That range of thermal environments within which some specified percentage of active people are not expected to complain.

**thermal insulation**

Any material resistant to the flow of heat.

**thermal insulation value of air**

The resistance to heat transmission through the atmosphere immediately surrounding an individual.

**thermal insulation value of clothing**

That amount of thermal insulation provided by a clothing system as worn. Also referred to as *insulation value of clothing*.

**thermal limit**

The maximum amount of power a transmission line can carry without suffering heat-related deterioration of line equipment, particularly conductors.

**thermal low**

Area of low pressure that is shallow in vertical extent and is produced primarily by surface temperatures. *See also thermal high.*

**thermal photograph**

*See thermogram.*

**thermal pollution**

Discharge of heated water from industrial processes that can affect the life processes of aquatic organisms.

**thermal radiation**

*See heat radiation.*

**thermal resistance**

A material's ability to prevent heat flow.

**thermal resistance value (R)**

A measure of the resistance to heat flow provided by clothing or other thermal barrier.

**thermal resistivity**

The inverse of thermal conductivity.



**thermal storage**

Storing heat for use at a later time. For example, ceramic bricks can be charged up to 1,200 degrees Fahrenheit in an 8-hour period and the heat released over the next 16 hours.

**thermal stress**

Any type of stress caused solely by deviations from comfortable temperatures or thermal environments for a given clothing system. *See also heat stress and cold stress.*

**thermal tides**

Atmospheric pressure variations due to the uneven heating of the upper atmosphere by the sun.

**thermal turbulence**

Turbulent vertical motions that result from surface heating and the subsequent rising and sinking of air.

**thermistor**

A semiconductor which exhibits rapid and large changes in resistance for relatively small changes in temperature and is used to measure temperature.

**thermoanemometer**

Device for measuring air velocity. Also referred to as a *heated wire anemometer* or *heated thermocouple anemometer*.

**thermochromic effect**

Exhibiting a color change on exposure to heat.

**thermocouple**

A thermoelectric device, consisting of two dissimilar metals, which can be used to measure temperature, or the effect of a change in temperature, as a result of a difference in electrical potential between the metals when exposed to heat.

**thermodynamics**

The science concerned with heat and work and the relationship between them.

**thermogenesis**

Heat production by the body or other means.

**thermogram**

A graphic representation of the temperature distribution on the surface of the body or other object.

**thermograph**

An instrument that measures and records air temperature.

**thermography**

The study or use of measuring surface temperatures of objects via emitted or reflected electromagnetic radiation.

**thermoluminescence**

Any emission of electromagnetic radiation within or near the visible range due to the heating of an object.

**thermoluminescent dosimeter**

A radiation badge worn by a person to measure radiation exposure dose. It contains a radiation sensitive crystalline material that emits light on exposure to a heat source in proportion to the amount of radiation absorbed.

**thermometer**

An instrument for measuring temperature. In principal, a thermometer makes use of a substance (such as alcohol or mercury) with a physical property that varies with temperature and is susceptible to measurement on some defined scale.

**thermophilic aerobic digestion**

A process to reduce pathogens in solid waste by agitating liquid sludge with air or oxygen to maintain aerobic conditions at residence times of 10 days at 55-60°C, (131-140°F) with a volatile solids reduction of at least 38 percent.

**thermoplastic**

A plastic material that is capable of being repeatedly softened by heat and hardened when cooled.

**thermoreceptor**

A sensor responding to or capable of sensing temperature or temperature difference.

**thermoregulation**

Any or all of the processes used by living organisms to balance heat production, gain, and loss in an attempt to maintain a suitable body temperature.

**thermosetting plastic**

Plastics that harden when first heated under pressure, but whose original characteristics are destroyed when remelted or remolded.

**thermosiphon system**

A solar collector system for water heating in which circulation of the collection fluid

through the storage loop is provided solely by the temperature and density differences between the hot and cold fluids.

**thermosphere**

The atmospheric layer above the mesosphere where the temperature increases rapidly with height.

**THERP**

See *Technique for Human Error Rate Prediction*.

**theta rhythm**

An EEG frequency band consisting of frequencies from about 4 to 8 Hz.

**thief**

A device that is lowered into a tank to take a sample of the stored material from any desired depth.

**thigh**

The upper portion of the leg, generally from the hip to the knee, consisting of the femur and the surrounding tissues.

**thigh circumference, distal**

The surface distance in the horizontal plane around the upper leg just proximal to the femoral epicondyles. Measured without tissue compression with the individual standing erect, his/her weight equally distributed on both feet, and no unnecessary muscular contractions.

**thigh circumference, midthigh**

The surface distance around the upper leg in a horizontal plane at the vertical midpoint between the lowest point in the pubic crotch and tibiale. Measured without significant tissue compression with the individual standing erect, his/her body weight distributed equally on both feet, and no unnecessary muscular contractions.

**thigh circumference, proximal**

The surface distance around the upper leg in the horizontal plane at a level as high in the pubic crotch as possible and at a level of the gluteal furrow. Measured without significant tissue compression with the individual standing erect, his/her weight balanced on both feet, and no unnecessary muscular contractions.

**thigh circumference, sitting**

The surface distance around the upper leg in a plane perpendicular to the thigh longitudinal axis and as high in the pubic crotch as possible. Measured without significant tissue compression and with the individual sitting erect, having no unnecessary muscular contractions.

**thigh clearance height, sitting**

The vertical distance from the upper seat surface to the highest point of the thigh above the sitting surface. Measured with the individual sitting erect in a seat whose height is at approximately the popliteal height, the thigh longitudinal axis horizontal, the lower leg vertical, and without unnecessary muscle contractions.

**thigh length**

The linear distance from the horizontal midpoint of the inguinal crease to the proximal border of the patella. Measured with both the hip and knee flexed 90°.

**thigh skinfold**

The thickness of a vertical skinfold taken along the midline of the thigh at the midthigh point. Measured with the individual standing comfortably erect, the weight distributed equally on both feet, and the leg musculature relaxed.

**thigh – thigh breadth, sitting**

The maximum horizontal linear distance from the most left lateral point of the thigh spread across the thighs to the most right lateral point of thigh spread. Measured with the individual seated erect and thigh longitudinal axes parallel or as nearly parallel as possible.

**third-class lever**

A lever system in which the force or effort is located between the fulcrum and resistance.

**third rail**

An electric conductor, located alongside the running rail, from which power is collected by means of a sliding shoe attached to the truck of electric rail cars or locomotives.

**third shift**

A night work shift of about 8 hours duration, between approximately 11 P.M. and 7 A.M. Also called *C-shift*, *graveyard shift*, *night shift*.

**third structure tax**

Any tax on road users other than registration fees or fuel taxes.

**thirst**

A desire for water due to a sensation of dryness in the mouth and/or throat or a general bodily need for water.

**thixotropy**

The property exhibited by a fluid that is in a liquid state when flowing and in a semisolid gel state when at rest.

**THM**

See *trihalomethane*.

**thoracic**

See *thorax*.

**thoracic cavity**

That bodily cavity which contains the heart and lungs, with their supporting tissues.

**thoracic fraction**

The mass fraction of inhaled particles that penetrate beyond the larynx.

**thoracic outlet syndrome**

See *scalenus anterior syndrome*.

**thoracic particulate mass**

Those particles that penetrate a separator whose size collection efficiency is described by a cumulative lognormal function with a medium aerodynamic diameter of 10 micrometers and with a geometric standard deviation of 1.5.

**thoracic particulate mass TLVs (TPM-TLVs)**

Those materials that are hazardous when deposited anywhere within the lung airways and the gas-exchange region of the lungs.

**thoracic spine**

That portion of the spine associated with the level of the thorax, vertebrae T1-T12.

**thoracolumbar**

See *sympathetic*.

**thorax**

That portion of the trunk from the neck to the diaphragm, containing the chest and its organs.

**thorium series**

Isotopes which belong to a chain of successful decays which begins with thorium-232 and ends with lead-206.

**threatened species**

Under the Federal Endangered Species Act of 1973: Any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

**three-dimensional**

Having extent in length, width, and depth; giving the impression of depth.

**three-dimensional anthropometry**

The measurement of points on the human body with reference to a well-defined three-dimensional space.

**three-mile limit**

The distance of one marine league or three miles offshore normally recognized as the limit of territorial jurisdiction. See also *territorial waters*.

**thresher's lung disease**

An acute pneumonia which may be found in agricultural workers exposed to moldy grain or hay. See also *farmer's lung disease*.

**threshold**

(1) *General*. The level at which effects are observed. (2) *Aviation*. The beginning of that portion of the runway available for landing. When the threshold is located at a point other than at the beginning of the pavement, it is referred to as either a displaced or relocated threshold.

**threshold contrast**

See *contrast threshold*.

**threshold dose**

The dose of a chemical below which an adverse effect does not occur.

**threshold limit value (TLV)**

An exposure value representing the level of air concentrations of chemical substances to which it is believed that workers may be exposed on a daily basis without suffering adverse effects. TLVs are developed by the American Conference of Governmental Industrial Hygienists (ACGIH), which is a non-regulatory agency. TLVs are, therefore, not enforceable by law unless adopted by the

authority having jurisdiction. *See also Permissible Exposure Limit, or PEL.*

**threshold limit value – ceiling (TLV–C)**

The concentration that should not be exceeded during any part of the working exposure.

**threshold limit value – short-term exposure limit (TLV–STEL)**

The concentration of a substance to which workers can be exposed continuously for a short period of time without suffering irritation, chronic or irreversible tissue damage, or narcosis of sufficient degree to increase the likelihood of accidental injury, impair self-rescue or materially reduce work efficiency, and provided the TLV-TWA is not exceeded.

**threshold limit value – time-weighted average (TLV-TWA)**

The values of toxic materials in air, which are to be used as guides for the control of health hazards in the work environment. They represent time-weighted average concentrations to which nearly all workers can be exposed for a normal 8-hour workday and 40-hour workweek, day after day, without adverse health effect.

**threshold of audibility**

The minimum effective sound intensity or pressure level at a specified frequency that will evoke an auditory sensation in a specified proportion of trials or in a specified proportion of people. Also referred to as *auditory absolute threshold*, *threshold of detectability*, *threshold of hearing*, and *zero level*.

**threshold of detectability**

*See threshold of audibility.*

**threshold of discomfort**

*See discomfort threshold.*

**threshold of feeling**

That acoustic stimulation level at which sound begins to be perceived as pain.

**threshold of hearing**

*See threshold of audibility.*

**threshold of pain**

*Heat Exposure.* Contact with surfaces that are hot enough to cause pain or exposure to radiant heat sources that are intense enough to result in skin/surface temperatures that cause pain. Temperatures of 215°F (101.6°C) and above cause pain on contact.

**threshold planning quantity (TPQ)**

A quantity designated for each chemical on the EPA's list of extremely hazardous substances that triggers notification by facilities to their SERC that such facilities are subject to emergency planning provisions under SARA Title III.

**threshold potential**

That membrane potential in an excitable cell at which the potential becomes unstable, leading to an action potential.

**threshold shift**

*Acoustics.* An increase in the hearing threshold level that results from exposure to noise. Threshold shifts can be either *temporary* or *permanent*.

**throat**

The fauces, oropharynx, and laryngopharynx with their enclosing tissues that link the nose and mouth with the respiratory and digestive systems of the body.

**thromboangitis obliterans**

*See Buerger's disease.*

**thrombocytopenia**

A decrease in the number of platelets in the blood.

**thrombosis**

Formation of blood clots, or thrombi, inside a blood vessel or in one of the chambers of the heart. A thrombus may form whenever the flow of blood in the arteries or the veins is impeded. Many factors can interfere with the normal flow of the blood. Sometimes heart failure or physical inactivity retards circulation generally, or a change in the shape or inner surface of a vessel wall impeded the flow of blood, as in atherosclerosis. Any mass that has grown inside the body can exert pressure on a vessel, or the vessel wall can be injured and roughened by an accident, surgery, a burn, cold, inflammation, or infection. The blood may thicken in a reaction to the presence of a foreign serum or snake venom. If the thrombus detaches itself from the wall and is carried along by the bloodstream, the clot is called an *embolus*. This condition is known as *embolism*. A thrombus may form in the heart chambers. This sometimes occurs after coronary thrombosis at the place where the wall of the heart is weakened or in the dilated atria in some cases of mitral stenosis. Be-

cause blood normally flows more slowly through the veins than through the arteries, thrombosis is more common in the veins than in the arteries.

**thrombus**

A solid mass formed in the living heart or in vessels from constituents of the blood.

**through bill of lading**

Bill of lading covering transportation through more than one mode in the chain of transport from shipper to consignee.

**through ladder**

A ladder from which a person getting off at the top must step through the ladder in order to reach the landing.

**throughput**

(1) Actual or estimated volume of natural gas that may be carried on a pipeline over a period of time. (2) A measure of productivity for cargo (i.e., containers per day, month, year) processed and handled through a port facility.

**throughput capacity**

The estimated potential tonnage of cargo that can be processed and handled through a port terminal or berthing facility during a given time period, determined by the design specifications of the terminal.

**throughput charge**

The charge for moving a container through a container yard off or onto a ship.

**thrust**

A rapid forward motion, especially of an upper limb.

**thrust fault**

*Seismology.* A specific kind of reverse fault in which the dip of the fault is less than 45 degrees over much if not all of its length. It is characterized not so much by vertical displacement, but by horizontal compression. Thrust faults are an obvious sign of compressional tectonics.

**THS**

See *territorial highway system*.

**thumb**

The first digit of the hand (has only two phalanges instead of three).

**thumb crotch**

That region of tissue between the thumb and the first finger (digit II).

**thumb crotch length**

The linear distance from the level of the base of the crotch between the thumb and index finger to the level of the crotch between the first and second fingers (digits II and III). Measured parallel to the long axis of the hand.

**thumb-tip reach**

The distance from a wall to the tip of the thumb. Measured with the individual standing erect against the wall, his/her elbow/arm extended forward, and his/her thumb aligned with the index finger.

**thumb-tip reach, extended**

The thumb-tip reach except that the measured shoulder is extended as far as possible while keeping the non-measured scapula firmly against the wall. Also referred to as *extended functional reach*.

**thumbwheel**

A manual rotary control device, only a portion of which extends above a panel surface, usually having the numbers 0 through 9 displayed spaced at equal distances around the circumference. May have individual, discrete detents for each number or a continuous rotary motion.

**thunder**

The sound due to rapidly expanding gases along the channel of a lightning discharge. See also *lightning*.

**thunder head**

See *cumulonimbus*.

**thunderstorm cloud**

See *cumulonimbus*.

**thyroarytenoid**

A skeletal muscle in the larynx which is involved in shortening and relaxing the vocal cords.

**thyroid**

A bi-lobed endocrine gland located in the neck attached to the thyroid cartilage which is involved in regulating body metabolism.

**thyroid cartilage**

The large, most superior cartilage of the larynx. The anterior prominence of this cartilage is larger in the male than the female and commonly referred to as the *Adam's apple*.

**tibia**

The larger, medial bone of the lower leg. Bears most of the body weight when standing. Commonly referred to as the *shinbone*.

**tibiale**

The most superior point on the medial border of the tibia's medial condyle.

**tibiale height**

The vertical distance from the floor to the proximal medial margin of the tibia. Measured with the individual standing erect and his/her weight balanced between both feet.

**tic**

Any movement disorder involving involuntary, brief, rapid contractions of related groups of muscles.

**tick**

A blood-sucking arachnid parasite. There are two types, hard and soft. Hard ticks have a smooth, hard cover that shields the entire back of the male but only the anterior portion of the back of the female. Soft ticks lack this shell. Ticks are visible to the human eye. A hard tick can be seen on the skin, where it burrows into the outer layer with its knife-like tongue. It must be removed from the skin with care. Soft ticks do not bore into the skin. The two varieties carry different diseases but both thrive in the spring and early summer and inhabit wooded areas, brush, and grass. Ticks serve as vectors for viruses causing Colorado tick fever, Lyme disease, and some forms of encephalitis and for rickettsiae that causes such diseases as Rocky Mountain spotted fever and boutonneuse fever.

**ticketing and fare collection**

All activities associated with fare collection and counting activities including supervision and clerical support. Includes printing, distributing, selling, and controlling of tickets, tokens and passes; pulling and transporting vaults to counting facilities; counting and auditing of fare collection; and, providing security for the fare collection process.

**tidal**

Flat foreshore area that is submerged at high tide, exposed or a wash at low tide, and generally devoid of vegetation.

**tidal air**

See *tidal volume*.

**tidal gauge**

An instrument for measuring the height of the tide.

**tidal marsh**

Low, flat marshlands traversed by channels and tidal hollows and subject to tidal inundation. Normally, the only vegetation present is salt-tolerant bushes and grasses. See also *wetlands*.

**tidal volume**

The volume of air that is inspired or expired in a single breath during breathing.

**tidegate**

Gate with a free-swinging barrier that is placed near or at the outlet of a conduit flowing into a body of water subject to high water from tides to separate fresh from salt water. See also *gate* and *floodgate*.

**tie**

(1) A condition in which two individuals, objects, or other entities have the same value or score. (2) An article of clothing, usually long and narrow, for tying around the neck.

**tie line**

A transmission line connecting two or more power systems.

**tie off to bank**

To moor one or more barges to the bank of the river, utilizing trees or any other structure available for securing the mooring wires.

**TIG welding**

A method of welding using tungsten inert gas.

**tight building syndrome (TBS)**

A condition associated with buildings designed and operated at minimum outdoor air supply which, as a result, often leads to complaints of adverse health effects and/or discomfort by the occupants. Also referred to as *sick building syndrome* or *SBS*.

**tight standard**

A time standard which allows less than the normal time for a given task to be done by a normal operator working at the normal pace.

**tile**

To place two or more windows on a display such that they abut one another, but do not overlap.

**till**

Channel report term meaning to steer toward a certain mark in a direct line until the occur-



rence or existence of another named fact has taken place.

**tilt cab**

Vehicle designed with engine beneath cab and having provision for tilting the cab forward on a pivot near the front bumper to provide easy access to the engine.

**timberhead**

One or two upright pins or steel bollards on the heads and stems of barges whereby the barges are coupled together for towing end to end. The term originated from the wooden timbers mounted on early wooden barges that were prevalent for transporting coal many years ago.

**timbre**

That auditory attribute by which a listener can discriminate between two sounds having the same loudness and pitch, but different tonal quality.

**time**

The interval that occurs or exists between any two clearly identified events. In contrast to the situation with respect to length and mass, the basic unit of time is the same (for all Systems of Units). Until recently, the basic unit of time was defined to be the length of a mean solar day. Now, however, the basic unit of time is the *second*, which had been previously defined to be 1/86,400 of one mean solar day, but is now more precisely defined and quantified, according to the International System of Units, the MKS System, the CGS System, and the English System as the duration of 9,192,631,770 periods of the radiation corresponding to the transition between the two hyperfine levels of the ground state of the  $^{133}\text{Cs}$  atom.

**time allowance**

See *allowance*.

**time and materials contract**

A legal agreement providing for materials at the contractor's cost and labor hours at a specified rate, including both direct and indirect costs, overhead, and profit.

**time and motion study**

The observation, measurement, and analysis of the operations involved in the performance of a job or task to determine standard times. See also *time study* and *work measurement*.

**time balancing**

The redistribution of those work elements or assignments performed by workers having the greatest workloads among workers who have less time-consuming workloads in an attempt to reduce the total job time.

**time constant**

The time required for a physical signal to rise to or fall from a specified percentage of its normal operating level. Typically an exponential relationship:  $= 1 - 1/e$  (63.2%).

**time delay**

That time required for a signal to be transmitted from one point and received at another point, separated by some physical distance.

**time domain**

The expression of a function in terms of times.

**time in service**

*Aviation.* With respect to maintenance time records, means the time from the moment an aircraft leaves the surface of the earth until it touches it at the next point of landing.

**time-lapse photography**

The use of one or more still, motion picture film, or video cameras operating at less than normal frame rates to record long-duration operations or processes for viewing later at normal frame rates to determine times.

**time locking**

*Rail Operations.* A method of locking, either mechanical or electrical, which, after a signal has been caused to display a permission to proceed, prevents, until after the expiration of a predetermined time interval after such signal has been caused to display its most restrictive aspect, the operation of any interlocked or electrically locked switch, movable-point frog, or derail in the route governed by that signal, and which prevents a permission-to-proceed signal from being displayed for any conflicting route.

**time-loss analysis**

A specialized system safety analytical technique used to evaluate responses to accidents in consideration of the actual moment in time the response occurred following the accident. An evaluation is made of these responses and a determination of their effectiveness is made

based upon losses that occurred up to the moment of intervention.

**time magnification**

The ratio of film/video camera sampling frequency over film/video projection frequency, both normally in units of frames/sec.

**time measurement unit (TMU)**

An MTM time interval equal to  $10^{-5}$  hour.

**time on sortie**

*U.S. Coast Guard Operations.* Total time on sortie from homeport/station or diversion from another mission until return to homeport/station or return for replenishment.

**time perception**

The ability to accurately judge the duration of time intervals without the use or benefit of any timing queues.

**time release**

A device used to prevent the operation of an operative unit until after the expiration of a predetermined time interval after the device has been actuated.

**time series**

A set of time domain data which has been sampled over some period of time, usually at regular intervals.

**time service begins**

*Transit.* Start of morning transit service, i.e., the time when a revenue service vehicle leaves the garage or point of dispatch.

**time service ends**

*Transit.* End of night transit service, i.e., the time when a revenue service vehicle returns to the garage or point of dispatch.

**time standards maintenance**

The periodic verification and updating of standard times to keep pace with technology, methodology, and other changes.

**time study**

The use of appropriate sampling, measurement, and analysis techniques to determine a standard time, including time allowances, for an operator to perform a given task or job using specified methods and under the prescribed working conditions. *See also [work measurement \(1\)](#).*

**time-weighted average (TWA)**

An exposure averaged over a given time period, often an 8-hour work day. Threshold

limit values or permissible exposure limits are often based on 8-hour time-weighted averages.

**time zone**

A geographic region within which the same standard time is used.

**timed transfer system**

A transit network consisting of one or more nodes (transit centers) and routes or lines radiating from them. The system is designed so that transit vehicles on all or most of the routes or lines are scheduled to arrive at a transit center simultaneously and depart a few minutes later; thus transfers among all the routes and lines involve virtually no waiting. TTS is typically used in suburban areas and for night service; in other words, for those cases in which headways are long.

**timeline**

A schedule of expected or projected events, with the dates and/or times at which each is to occur and its duration.

**timeline chart**

A graphical or symbolic representation of a timeline.

**timeshare**

To integrate performance on two or more tasks using divided attention, parts of which are performed either in parallel or sequentially, all within a given period of time.

**timing relay**

A relay which will not close its front contacts or open its back contacts, or both, until the expiration of a definite time interval after the relay has been energized.

**tinnitus**

A ringing, buzzing, or other similar subjective or pathological sensation in the ears.

**tint**

Any color lighter than medium gray.

**tintometer**

An instrument using a combination of colored glass filters to estimate the intensity of colors.

**tipple**

A central facility used in loading coal for transportation by rail or truck.

**tire capacity**

The rated capacity in pounds that the tire is designed to support, as established by the current Tire and Rim Association ratings.

**TIRES**

See *transportation interface and reporting system*.

**tissue**

A group of cells with similar structure and function. There are four basic tissues in the body: muscle, nerve, epithelium, and connective tissues (including blood, bone, and cartilage).

**tissue rheology**

The study of the deformation and flow of tissue under external stress.

**titanium**

A chemical element, atomic number 22, atomic weight 47.90, symbol Ti.

**title**

An identifier which names a display and is distinguishable from other display structures.

**title search**

A process used to confirm legal ownership of property.

**titration**

The determination of a constituent in a known volume of a solution by the measured addition of a second solution of known strength to the completion of its reaction with the component in the first solution, as indicated, typically, by the formation of a colored endpoint.

**TKA line**

See *trochanter – knee – ankle line*.

**TL**

See *taxilane*.

**TLC**

Thin-layer chromatography.

**TLD**

Thermoluminescent dosimeter.

**TLSC**

See *terrestrial life cycle safe concentration*.

**TLV**

See *threshold limit value*.

**TLV-C**

See *threshold limit value - ceiling*.

**TLV-STEL**

See *threshold limit value - short-term exposure limit*.

**TLV-TWA**

See *threshold limit value - time-weighted average*.

**TLX**

See *Task Load Index*.

**TMA**

See *transportation management area*.

**TMJ**

See *temporomandibular joint disorder*.

**TMU**

See *time measurement unit*.

**toad skin**

(*slang*) A dry, rough skin texture associated with a deficiency of vitamin A.

**TOBEC**

See *total body electrical conductivity*.

**TOC**

See *total organic carbon*.

**TODA**

See *takeoff distance available*.

**toe**

Any of the digits of the foot.

**toeboard**

A vertical barrier at floor level erected along exposed edges of a floor opening, wall opening, platform, runway, or ramp to prevent falls of materials.

**toenail**

The elastic tissue covering the dorsal portion of any of the terminal phalanges of the foot. See also *fangernail*.

**toggle switch**

A two- or three-position switch, either electro-mechanical or a graphic display image, which can be flipped either from side to side or from a central position to either side for control operation.

**tolerance**

(1) *General*. The ability to endure an unusual amount of stress or dose of a substance that would typically adversely affect others. (2) *Environmental*. The permissible residue levels for pesticides in raw agricultural produce and processed foods. Whenever a pesticide is

registered for use on a food or a feed crop, a tolerance (or exemption from the tolerance requirement) must be established. EPA establishes the tolerance levels, which are enforced by the Food and Drug Administration and the Department of Agriculture. (3) *Engineering*. See **engineering tolerance**.

**toll road**

Travel fee is collected at entry or exit.

**tomography**

The study or practice of sectional radiography.

**ton**

A unit of weight in the U.S. Customary System equal to 2,000 pounds. Also referred to as a *short ton*.

**ton-deadweight**

The carrying capacity of a ship in terms of the weight in tons of the cargo, fuel, provisions, and passengers which a vessel can carry.

**ton-displacement**

The weight of the volume of water which the fully loaded ship displaces.

**ton-kilometer by inland waterways**

Unit of measure of goods transport which represents the transport of one ton by inland waterways over one kilometer.

**ton mile**

One ton (2,000 pounds) transported one statute mile (5,280). Ton miles are computed by multiplying the aircraft miles flown on each inter-airport hop by the number of tons carried on that hop. See also **average length of haul**.

**ton miles tax**

A tax calculated by measuring the weight of each truck for each trip. The gross weight is assigned a tax rate which is multiplied by the miles of travel.

**ton of refrigeration**

The extraction of 12,000 Btu per hour or 288,000 Btu per day of 24 hours. The latter is referred to as a ton-day of refrigeration. Also referred to as a *ton of air conditioning*.

**ton offered kilometer**

Unit of measure representing the movement of one ton available in a freight vessel when performing the services for which it is primarily intended over one kilometer.

**ton-registered**

The cubical contents or burden of a vessel in tons of 100 cubic feet. The space within a vessel in units of 100 cubic feet.

**tonal discrimination**

See **pitch discrimination**.

**tonal gap**

A sound frequency band in which an individual has low or non-existent auditory sensitivity and has normal or better sensitivity on both sides of that band.

**tondal**

The unit of force which will accelerate a long ton 1 foot per sec<sup>2</sup>.

**tone**

(1) *Acoustics*. A sound sensation having a pitch. (2) *Colorimetric*. A shade or variation in shade or color. (3) *Anatomy*. Normal degree of vigor and tension; in muscle, the resistance to passive elongation or stretch. See **tonus**.

**tone deaf**

The inability to discriminate between tones that are close together in pitch.

**tongue**

The muscular structure attached to the posterior floor of the mouth and which is involved in mastication, speech, swallowing, and taste.

**tonicity**

The level of tension or contraction in a static muscle or group of muscles.

**tonne**

A mass in the metric system equal to 1,000 kilograms. Also referred to as a *long ton*.

**tonus**

That degree of tension in a static muscle. More commonly referred to simply as *tone* or *muscle tone*.

**tool**

Any device, piece of instrumentation, or machine intended to perform an operation or aid in the performance of an operation.

**tool allowance**

A time allowance for a worker to adjust and/or maintain his/her tools.

**tool design**

The part of engineering involved with the design of tools, especially of hand tools.

**tooth**

One of the small, bone-like structures of the jaws for the biting and mastication of food; the teeth also assist in shaping sounds and forming words in speech.

**toothpick**

Steel bar about 3 feet long placed in ratchet ends to keep wire from turning when tightening ratchet.

**top around**

*Maritime Navigation.* The turning of a tow from up-bound to down-bound, either intentionally or unintentionally.

**top event**

As pertains to fault tree analysis (FTA) and/or management oversight and risk tree (MORT), the primary fault event under analysis. Represented graphically as a rectangle.

**top light**

To illuminate one or more individuals or a scene from directly above.

**top plate**

*Rail Operations.* A metal plate secured to a locking bracket to prevent the cross-locking from being forced out of the bracket.

**top shell**

The tank car tank surface, excluding the head ends and bottom shell of the tank car tank.

**topography**

The physical characteristics of a surface area including relative elevations and the position of natural and manmade features.

**topping off**

The operation of completing the loading of a tank to a required ullage.

**TORA**

See *takeoff run available*.

**tornado**

An intense, rotating column of air that protrudes from a cumulonimbus cloud in the shape of a funnel or a rope and touches the ground. See also *funnel cloud*.

**tornado vortex signature (TVS)**

An image of a tornado on the Doppler radar screen that shows up as a small region of rapidly changing wind speeds inside a mesocyclone.

**tornado warning**

A warning issued when a tornado has actually been observed either visually or on a radar screen.

**tornado watch**

A forecast issued to alert the public that tornadoes may develop in a specified area.

**torque**

(1) The effective perpendicular component of a force (or the effective sum of forces) applied to an object at some distance from a point representing an axis about which rotation can occur, inducing or tending to induce an angular acceleration. (2) The amount of twisting effort exerted at the crankshaft by an engine. The unit of measure is a pound-foot which represents a force of one pound acting at right angles at the end of an arm one foot long. *Gross torque.* The maximum torque developed by an engine without allowing for the power absorbed by accessory units. *Net torque.* The torque available at the flywheel after the power required by engine accessories has been provided.

**torr**

A unit of pressure equal to 1.316 E-3 atmospheres. Seven hundred sixty (760) torr is equal to one atmosphere of pressure.

**torsion**

The twisting of a rigid structure about an internal axis due to an applied torque.

**torso**

*Anatomy.* Refers to the central portions of the body excluding the limbs and head, typically the upper and lower chest, back, abdomen and pelvic regions.

**torso line**

The line connecting the "H" point and the shoulder reference point as defined in Society of Automotive Engineers (SAE) Recommended Practice J787g, "Motor Vehicle Seat Belt Anchorage," September 1966.

**tort**

A type of legal wrong of a personal nature. Some torts are nuisance, negligence, trespass, waste, violation of riparian rights, strict li-

ability for ultrahazardous activities, negligent misrepresentation, liable, slander, false imprisonment, and negligent or intentional infliction of emotional distress.

**tort-feasor**

A wrong-doer; an individual or business that commits or is guilty of a tort.

**total airborne particulate**

See *total particulate*.

**total aircraft revenue mile**

The distance flown by aircraft in revenue passenger and/or nonpassenger service, including extra sections.

**total body electrical conductivity (TOBEC)**

A technique for estimating/measuring total body fat and lean body mass by placing the body in an electromagnetic field and observing the change in the coil's impedance.

**total body fat (TBF)**

The sum of all the fat deposited in the body. See also *body fat*.

**total body water (TBW)**

An estimated value for all the water resident in the body; the sum of both the intracellular and extracellular water. See also *extracellular water*.

**total bottom time (TBT)**

The length of time an individual was or has been working at depth underwater; the total time an individual has been rehabilitated at the maximum working pressure in a hyperbaric chamber.

**total departures performed in all services**

The total number of aircraft takeoffs made in scheduled and nonscheduled service.

**total departures performed in nonscheduled services**

The total number of aircraft takeoffs made in nonscheduled service.

**total departures performed in scheduled service**

The total number of aircraft takeoffs made in scheduled service including extra sections.

**total disability**

Any disability short of death which prevents an individual from following any gainful employment, or which includes the loss of use of a) both eyes; b) one eye plus a hand, arm, leg,

or foot; c) any two members (hand, arm, foot, or leg) not on the same limb.

**total energy**

All energy consumed by end-users, including electricity but excluding the energy consumed at electric utilities to generate electricity. In estimating energy expenditures, there are no fuel-associated expenditures for hydroelectric power, geothermal energy, solar power, or wind energy, and the quantifiable expenditures for process fuel and intermediate products are excluded.

**total energy consumption**

The sum of fossil fuel consumption by the five sectors (residential, commercial, industrial, transportation, and electric utility) plus hydroelectric power, nuclear electric power, net imports of coal coke, and electricity generated for distribution from wood, waste, geothermal, wind, photovoltaic, and solar thermal energy.

**total exposure point**

A point of potential exposure to substances from more than one exposure pathway.

**total facility activity**

*Aviation*. The sum of en route facility activity + terminal facility activity.

**total flight service**

The sum of flight plans originated and pilot briefs multiplied by two, plus the number of aircraft contacted. No credit is allowed for airport advisories or radio contacts.

**total float**

The additional time available for performing an activity beyond its actual duration.

**total flooding system**

A fixed suppression system which is arranged to automatically discharge a predetermined concentration of agent into an enclosed space for the purpose of extinguishing or controlling fire.

**total light loss factor**

The mathematical product of all recoverable and non-recoverable light loss factors.

**total lung capacity**

The volume contained within the lungs after a maximal inspiration.



**total metabolic cost**

See *gross metabolic cost*.

**total operations**

*Aviation*. All arrivals and departures performed by military, general aviation, commuter/air taxi, and air carrier aircraft.

**total organic carbon (TOC)**

A measure of the amount of carbon existing in organic molecular form within a water sample.

**total particulate**

The concentration of particulates in air without respect for the size of the particles collected. The concentration is expressed in milligrams per cubic meter of air. Also referred to as total airborne particulate.

**total pressure**

The algebraic sum of static pressure and velocity pressure of a fluid with due regard for sign.

**Total Quality**

A technique intended to generate a culture which is quality oriented and provides for continual improvement through developing an environment in which employees gain a better understanding of work processes, employee-management communication is encouraged, and employees are empowered to aid in enhancements.

**Total Quality Environmental Management (TQEM)**

Philosophy developed by the Global Environment Management Institute (GEMI) applying the principles of Total Quality Management (TQM) to environmental management. See also *GEMI* and *TQM*.

**Total Quality Management (TQM)**

Management philosophy developed in the 1980s which uses statistical theory to improve production quality and corporate performance.

**total reaction distance**

That distance traveled by a vehicle during the operator's total reaction time.

**total reaction time**

That time required for the operator of a vehicle to make contact with the brake pedal or other stopping mechanism or to begin an evasive maneuver once it is recognized that such an action is necessary.

**total revenue load factor**

The percent that revenue ton miles (passenger and nonpassenger) are of available ton miles in revenue services, representing the proportion of the overall capacity that is actually sold and utilized.

**total solids**

The sum of all dissolved and suspended solids in water.

**total stopping distance**

That distance required for a vehicle to come to rest from the moment at which the necessity for braking is required. It is equal to the sum of the total reaction distance, brake reaction distance, and braking distance.

**total suspended particulate (TSP)**

A weight determination of the particulate matter in the ambient air as determined from a filter sample obtained using a high volume air sampler.

**total suspended solids (TSS)**

A measure of the suspended solids in wastewater, effluent, or water bodies, determined by using tests for "total suspended nonfilterable solids."

**total thermal insulation value of clothing ( $I_t$ )**

The overall thermal insulation value of a clothing system, represented by the sum of the thermal insulation value of clothing and a factor for the insulation value of air divided by a factor for the surface area of the clothing. Also referred to as effective thermal insulation value of clothing. Represented by the formula:

$$I_t = I_{cl} + \frac{I_a}{f_{cl}}$$

where:

$I_{cl}$  = thermal insulation value of clothing

$I_a$  = thermal insulation value of air

$f_{cl}$  = clothing area factor

**total ton miles**

The aircraft miles flown on each inter-airport hop multiplied by the tons of revenue traffic (passenger and nonpassenger) carrier on that hop.

**totally encapsulated chemical protective suite**

A full body garment constructed of chemical protective materials which covers the wearer's torso, head, arms, legs, respirator, and may

cover the hands and feet with tightly attached gloves and boots. It completely encloses the wearer and respirator by itself or in combination with the wearer's gloves and boots.

**touch**

The sensation arising from light to moderate stimulation of the pressure receptors in the skin. Touch is not a single sense, but several. There are separate nerves in the skin to register heat, cold, pressure, pain, and touch. These thousands of nerves are distributed unevenly over the body, so that some areas are more responsive to cold, others to pain, and others to heat or pressure.

**touch-sensitive display**

See *touchscreen*.

**touch tablet**

A pressure-sensitive computer input device consisting of a flat surface which is capable of converting local position to a position on a display for cursor or other control.

**touch-tone**

Pertaining to a numeric keypad on which each key, when depressed, outputs a pair of tones unique to that key. For use with telecommunications equipment or as a computer input device.

**touch zone**

That area within a display on a touch screen which can respond to activation by pressure.

**touchscreen**

A display, at least some portion of which is sensitive to pressure or the position of an object on the face of the screen for input or direct manipulation. Also called *touch-sensitive display*.

**tour operators**

Establishments primarily engaged in arranging and assembling tours for sale through travel agents. Tour operators primarily engaged in selling their own tours directly to travelers are also included in this industry.

**tourniquet**

A device for compression of an artery or vein. It is used to stop excessive bleeding, to prevent the spread of snake venom, and to facilitate obtaining blood samples or giving intravenous injections.

**tow**

One or more barges or other floating vessels in the charge of a self-propelled vessel which has undertaken to transport such responsibility elsewhere. A tow is made up when it has been hitched together and made ready for moving. A barge moored to the front of a towing vessel is the tow barge and the ones out in front are the lead barges. When a barge is towed alongside a towboat, it is "slung under her arm" or "on the hip." When pulled behind, the barges are said to be "railroaded." When loosely coupled behind, it is called the "mule train."

**tow line**

A holding up line; normally a lashing from the forward head of one barge to the after head of a barge alongside.

**towboat**

A self-propelled, compact, shallow-draft boat with a squared bow and towing "knees" for pushing tows of barges on inland waterways. In early river transportation, the freight-carrying vessels were pulled or "towed." The contemporary method is to push barges but the traditional term "towboat" is still used for the modern barge pushers instead of the more accurate term "pushboat." See also *boat*, *motorboat*, and *tug*.

**tower**

A tall framework or structure, the elevation of which is functional.

**towering cumulus**

See *cumulus*.

**towhead**

A small island or spit of land extending above or below the main or larger island. It may or may not be recently formed.

**towing**

Engaged in towing any vessel or object, other than a person.

**towing and tugboat service**

Establishments primarily engaged in furnishing marine towing and tugboat services in the performance of auxiliary or terminal services in harbor areas. The vessels used in performing these services do not carry cargo or passengers.

**towing knees**

The heavily constructed steel angles mounted in a fixed position on the bow of all western

river towboats to enable them to push against the stern of barges.

**Town Counsel**

An attorney duly appointed and authorized to represent and advise a municipality. For a city this would be the *City Solicitor*.

**toxemia**

A condition in which toxins produced by body cells at a local site of infection are contained in the blood. This condition is also referred to as *blood poisoning*.

**toxic**

(1) *General*. Term used to describe a chemical that has the ability to cause harmful or fatal effects upon exposure to humans, animals, or plants. The level of toxicity is normally based upon a scientific evaluation of the dose/response relationship. Basically, the evaluation of the results of varying degrees of exposure to toxic agents determines the level of their respective toxicity. (2) *EPA*. One of four characteristics which, if displayed by a waste product, renders that waste hazardous under RCRA. (3) *Law*. Poisonous; having the character or producing the effects of a poison; referable to a poison; produced by or resulting from a poison.

**toxic characteristic leaching procedure (TCLP)**

Testing method established by the EPA used to determine the toxicity of a solid waste. Under specific testing parameters, the waste will be determined toxic and therefore hazardous if certain listed commodities will "leach" out of the waste at levels considered threatening to health or the environment.

**toxic chemical release form**

Information form required to be submitted by facilities that manufacture, process, or use (in quantities above a specific amount) a chemical listed under SARA Title III.

**toxic cloud**

An airborne mass of gases, vapors, fumes, and/or aerosols containing toxic materials.

**toxic dose**

The dose required to produce a toxic effect.

**toxic dust**

Dust that may be harmful to the respiratory system or other part of the body if inhaled and/or absorbed into the blood stream.

**toxic effects**

The effects of exposure to toxic substances that may be acute or chronic, systemic or local.

**toxic material**

A substance which may produce an injurious or lethal effect through ingestion, inhalation, or absorption through the body surface. *See also toxic substance*.

**toxic pollutants**

(1) *General*. Materials contaminating the environment that cause death, disease, birth defects, or organisms that ingest or absorb them. The quantities and length of exposure necessary to cause these effects can vary widely. (2) *Federal Water Pollution Control Act*. Those pollutants, or combinations of pollutants, including disease-causing agents, which after discharge and upon exposure, ingestion, inhalation, or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains, will cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunctions in reproduction) or physical deformations, in such organisms or their offspring.

**Toxic Release Inventory System (TRIS)**

Includes all facilities which use toxic chemicals in reportable quantities under SARA, Title III, Section 313 and their releases of such chemicals to the air, water, and land. Reporting covers approximately 20,000 sites and is required each July 1st for the previous year.

**toxic substance**

(1) *General*. A chemical or mixture that may present an unreasonable risk of injury to health or the environment. (2) *OSHA*. A substance that demonstrates a potential to produce cancer, to produce short- and long-term disease or bodily injury, to affect health adversely, to produce acute discomfort, or to endanger the life of man or animal as a result of exposure via the respiratory tract, skin, eye, mouth, or other route, in quantities which are reasonable for experimental animals or which have been reported to have produced toxic effects in man.

### **Toxic Substances Control Act (TSCA)**

Federal statute enacted in 1976 designed to provide control over toxic chemicals before they reach commerce and industry. The Act requires pre-notification to the EPA of all new chemicals prior to manufacturing including all existing data on toxicity and other environmental data, so that the EPA can limit or prohibit the use of the chemical if it is found to pose an unreasonable risk to human health and/or the environment. The Act also authorizes the EPA to develop a comprehensive inventory of existing chemicals and to require testing for all that appear to have the potential for risk to health and the environment.

### **toxic tort**

A type of personal legal injury arising out of chemical releases and exposure.

### **toxic unit**

Any established unit of toxic activity, often expressed in terms of the minimal dose which will be lethal.

### **toxic waste**

Hazardous, poisonous substances such as PCBs, and DDT. Several federal laws regulate the use, transportation, and disposal of toxic material.

### **toxicant**

A poisonous agent that kills or injures humans, animals, or plants.

### **toxicate**

To poison. Not used to describe the act of one who administers a poison, but the action of the drug or poison itself.

### **toxicity**

The state of being poisonous; the capacity of a substance to induce damage to living tissue. Toxicity can be *acute* (immediately harmful), *chronic* (harmful over time), *local* (effects only the site of exposure), or *systemic* (distributed throughout the body).

### **toxicity assessment**

For each chemical identified in hazard identification, the toxicological database is reviewed to determine what kinds of adverse effects might occur from exposure and how much exposure is required to produce such effects. *See also hazardous identification.*

### **toxicology**

The science and study of chemicals and their adverse systemic effects, including source, chemical composition, action, tests, and antidotes.

### **toxin**

Proteins or conjugated protein substances that are lethal to other organisms. They are produced by some higher plants, certain animals, and pathogenic bacteria.

### **TOXLINE**

Toxicology Information Online

### **TP**

Total pressure.

### **TPM-TLV**

*See thoracic particulate mass TLV.*

### **TPQ**

*See threshold planning quantity.*

### **TQEM**

*See Total Quality Environmental Management.*

### **TQM**

*See Total Quality Management.*

### **trace element**

Any chemical element present in small quantities in living organisms, but essential to normal health, growth, and development.

### **trace minerals**

Those essential inorganic chemicals found or required in small quantities in living organisms, generally providing the trace elements. *See also trace elements.*

### **traceability**

Having the capability to verify the original requirement, measurement, standard, calibration, or other statement/process by suitable reference or demonstration.

### **tracer**

(1) *Radiation.* An isotope, or non-natural mixture of isotopes of an element, which may be incorporated into a substance for determining metabolic pathways, mode of action, site of action, rates of excretion, etc. (2) *Gas.* Compounds, such as sulfur hexafluoride, which are used to identify suspected pollutant pathways and to quantify ventilation rates. Tracer gases may be detected qualitatively by their odor or quantitatively by air monitoring equipment.

**trachea**

The windpipe that conducts air to and from the lungs. This tube, about three-fifths of an inch wide and 4 inches long, is reinforced at the front and sides by a series of C-shaped rings of cartilage that keep the passage uniformly open. The gaps between the rings are bridged by strong fibroelastic membranes. The trachea is lined with a mucous membrane covered with small hair-like processes called cilia. These continuously sweep foreign material out of the breathing passages toward the mouth. The process is retarded by cold but speeded by heat. Although the trachea is closed off during swallowing by the epiglottis, a sort of lid, a foreign body, such as a piece of meat, occasionally becomes lodged in it and causes choking. Surgical incision of the trachea, called tracheotomy, may be necessary for removal of the foreign body.

**tracheitis**

Inflammation of the trachea.

**track**

(1) A pair of rails over which railway vehicles can run. (2) To attempt to or to follow a moving target, while minimizing the error, on a performance test. (3) To assign to a group according to perceived abilities for educational performance. (4) The trace left by a moving target on a display or hardcopy. (5) The tendency of individuals to retain their rank order within a population on a given variable over time.

**track circuit**

An electrical circuit of which the rails of the track form a part.

**track damage**

All costs, including labor and material, associated with the repair or replacement in kind of signals, track, track structures (including bridges or tunnels) or roadbeds that were damaged in a collision, derailment, or other reportable event. When track, signals, structures, etc. are damaged beyond repair, the current cost of new materials is to be used. However, replacement of second-hand rail with second-hand rail, may be charged at the current cost of such rail.

**track mile**

One mile of single track.

**trackage rights agreement**

An agreement through which a railroad obtains access and provides service over tracks owned by another railroad where the owning railroad retains the responsibility for operating and maintaining the tracks.

**trackball**

A computer input device consisting of an upward-facing sphere enclosed in a housing with transducers for converting rotational motion caused by the hand or fingers into translational motion of a cursor or other object on a display.

**tracked air cushion vehicle**

A laterally guided vehicle that is suspended above the track by an air cushion system.

**tracked levitated vehicle**

A laterally guided vehicle that is suspended above the track by magnetic levitation.

**trackless trolley**

Another name for *trolleybus*.

**TRACON**

See *Terminal Radar Approach Control*.

**tractor**

(1) A vehicle designed for pulling loads greater than the weight actually applied to the vehicle. The trailer on which the load is carried is connected to the tractor via the fifth wheel. (2) The non-cargo-carrying power unit that operates in combination with a semitrailer or trailer, except that a truck tractor and semitrailer engaged in the transportation of automobiles may transport motor vehicles on part of the power unit. Also called *truck tractor*.

**tractor-semitrailer**

A combination vehicle consisting of a power unit (tractor) and a semitrailer.





*Typical tractor with semitrailer attached*

**trade association**

An association of business organizations having similar problems and engaged in similar fields formed for mutual protection, interchange of ideas and statistics, and for maintenance of standards within their industry.

**trade name**

A name by which a product is known in normal industry or commerce.

**trade secret**

(1) *OSHA*. As defined in the OSHA Field Operations Manual (FOM), any confidential business device or process which gives an employer an advantage over its competitors.  
(2) *Law*. A trade secret, as protected from misappropriation, may consist of any formula, pattern, or device of compilation of information which is used in one's business, and which gives a person an opportunity to obtain an advantage over competitors who do not know or use it.

**trade union**

A combination of workers of the same trade or of several allied trades, for the purpose of securing by united action the most favorable

conditions regarding wages, hours of labor, etc. for its members.

**trade wind**

The wind that occupies most of the tropics and blows from the subtropical highs to the equatorial low.

**trade wind inversion**

A temperature inversion frequently found in the subtropics over the eastern portions of the tropical oceans.

**tradeoff**

The giving up of some desired characteristics or parts of those characteristics for other desired characteristics when not all desires can be available due to cost or other considerations.

**tradeoff study**

Any study intended to determine which characteristics of a product should be sacrificed in order to include or retain other characteristics.

**traditional anthropometry**

*See classical anthropometry.*

**traffic**

The flow of people and/or vehicles along a defined route.

**traffic accident**

An accident that involved a motor vehicle that occurred on a public highway or road in the United States and that resulted in property damage or personal injury. Does not include accidents that happened in a parking lot, in a driveway, on a private road, or in a foreign country.

**traffic alert and collision avoidance, type I system (TCAS)**

Utilizes interrogations of, and replies from, airborne radar beacon transponders and provides traffic advisories to the pilot.

**traffic alert and collision avoidance, type II system (TCAS)**

Utilizes interrogations of, and replies from, airborne radar beacon transponders and provides traffic advisories and resolution advisories in the vertical plane.

**traffic alert and collision avoidance, type III system (TCAS)**

Utilizes interrogation of, and replies from, airborne radar beacon transponders and provides traffic advisories and resolution adviso-



ries in the vertical and horizontal planes to the pilot.

**traffic assignment zone**

In planning, a division of a study area that is represented by a centroid and used for traffic assignment purposes.

**traffic circle**

A junction of roads that form a circle around which traffic normally moves in one direction.

**traffic control device**

A sign, signal, marking, or other device placed on or adjacent to a street or highway, by authority of a public body or official that has jurisdiction, to regulate, warn, or guide traffic.

**traffic control system**

A block signal system under which train movements are authorized by block signals whose indications supersede the superiority of trains for both opposing and following movements on the same track.

**traffic count**

A record of the number of vehicles, people aboard vehicles, or both, that pass a given checkpoint during a given time period.

**traffic density**

The average number of vehicles occupying a specified length of road.



*Traffic density can change with time of day, weather conditions, or roadway anomalies (accidents, construction, etc.)*

**traffic diagram**

A chart or figure to illustrate the traffic flow within a certain region.

**traffic flow**

A measure of the quantity of people or vehicles passing a specified point in a given period of time.

**traffic flow management**

The process that ensures optimum flow of air traffic to and through areas during times when demand exceeds, or is expected to exceed, the available capacity of the system; an element of the air traffic management process.

**traffic inspection facility**

An area having facilities to examine pedestrian and vehicular traffic and/or cargo.

**traffic known**

With respect to Air Traffic Control (ATC) clearances, means aircraft whose altitude, position, and intentions are known to ATC.

**traffic locking**

*Rail Operations.* Electric locking which prevents the manipulation of levers or other devices for changing the direction of traffic on a section of track while that section is occupied or while a signal displays an aspect for a movement to proceed into that section.

**traffic management coordinator**

A traffic management specialist resident at the Air Route Traffic Control Center (ARTCC) Traffic Management Unit (TMU) providing coordination between the national level central flow control function of the ATCCC and local (ARTCC) controllers.

**traffic management specialist**

Specialist resident at the Air Traffic Control Command Center (ATCCC) who coordinates between local traffic management specialists at ARTCCs and manages flow control operations.

**traffic management unit (TMU)**

A non-control, coordination position at the Air Route Traffic Control Center (ARTCC) connected to the central flow-control function at the ATCCC and responsible for dissemination of flow control information at the local level.

**traffic pattern**

*Aviation.* The traffic flow that is prescribed for aircraft landing at, taxiing on, or taking off from an airport.

**traffic regulations**

Prescribed rules of conduct to promote the orderly and safe flow of traffic.

**traffic separation scheme**

Area of water with lanes designated to separate opposing streams of vessel traffic.

**traffic violation**

See *serious traffic violation*.

**trafficway**

That part of a thruway designed, improved, and ordinarily used for motor vehicle travel.

**trafficway class**

A classification of highways based on a route sign.

**tragion**

The deepest point at the notch just above tragus.

**tragion height, sitting**

The vertical distance from the seat surface to the level of tragion. Measured with the individual sitting erect, looking straight ahead.

**tragion height, standing**

The vertical distance from the floor to tragion. Measured with the individual standing erect and the body weight distributed equally on both feet.

**tragion to back of head**

The horizontal linear distance from tragion to inion. Measured with the individual standing erect, looking straight ahead.

**tragion to top of head**

The vertical distance from tragion to the horizontal vertex plane. Measured with the individual sitting or standing erect, looking straight ahead.

**tragion to wall**

The horizontal linear distance from a wall to tragion. Measured with the individual standing erect, looking straight ahead, and with his/her back and head against the wall.

**tragus**

The piece of cartilaginous tissue just anterior to the entrance to the external auditory meatus.

**trail**

A cleared path, beaten track, or improved surface, as through woods or wilderness, not usually trafficked by vehicles because of width, seasonal conditions, or access restrictions.

**trail dike**

A dike of wooden pile construction or rock that extends usually from the riverbank outward toward the channel and trails downstream so as to direct the flow of water into the channel. Trail dikes help maintain the channel by keeping it swept by the directional currents.

**trailer**

(1) A motor vehicle with or without motive power, designed for carrying persons or property and for being drawn by another motor vehicle. (2) See *trailing hand*.

**trailer converter dolly**

Trailer chassis equipped with one or more axles, a lower half of a fifth wheel and a drawbar.

**trailer on a flat car/container on a flat car (TOFC/COFC)**

Transportation of containers on the chassis of railroad flatcars. Often referred to as intermodal service. See also *intermodal*.

**trailership**

A vessel, other than a carfloat, specifically equipped to carry motor transport vehicles and fitted with installed securing devices to tie down each vehicle. The term trailership includes roll-on/roll-off (RO/RO) vessels.

**trailing hand**

That hand which tends to lag the leading hand when using both hands in a synchronized operation because it is not the center of focus. May also be referred to as *trailer*.

**trailing movement**

*Rail Operations*. The movement of a train over the points of a switch which face in the direction in which the train is moving.

**trailing point switch**

*Rail Operations*. A switch, the points of which face away from traffic approaching in the direction for which the track is signaled.

**train**

(1) To impart one or more particular skills to an individual via some combination of information, instructions, demonstration, and directed activity under controlled conditions with the intent of leading directly to the practical use of those skills. (2) One or more engines coupled with one or more rail cars, ex-

cept during switching operations or where the operation is that of classifying and assembling rail cars within a railroad yard for the purpose of making or breaking up trains. (3) A locomotive unit or locomotive units coupled, with or without cars, involved in a railroad operation conducted on a main track. It does not include yard movements. (4) A unit of equipment or a combination of units of equipment (including light locomotives) in condition for movement over tracks by self-contained motor equipment. (5) A locomotive unit or locomotive units coupled, with or without cars and with or without markers displayed. Included in this definition are those trains consisting entirely of self-propelled units designed to carry passengers and/or freight traffic. *See also locomotive, rail, railway, and railroad.*

**train accident**

Any collision, derailment, fire, explosion, act of God, or other event involving the operation of on-track equipment and resulting in reportable damage to track or on-track equipment above an established dollar threshold.

**train berth**

In rail operations, the space designated for a train of given length to occupy when it is stopped at a station platform, in a terminal, on a transfer track, or at some other designated place.

**train density**

(1) The number of trains that can be operated safely over a segment of railroad in each direction during a 24-hr. period. (2) The average number of trains that pass over a specified section of railroad in a specified period.

**train hour**

The elapsed time of a road freight train between the time of leaving the initial terminal and the time of arrival at the final terminal, including train switching at the time of arrival at the final terminal, including train switching at waystations and delays on road.

**train incident**

Any event involving the movement of railroad on-track equipment that results in a death, a reportable injury, or a reportable illness, but in which railroad property damage does not exceed the reporting threshold.

**train mile**

(1) A unit of comparative measure equal to the movement of one train for a distance of one mile. (2) The movement of a train a distance of one mile measured by the distance between terminals and/or stations and includes yard switching miles, train switching miles, and work train miles. Yard switching miles may be computed on any reasonable, supportable, and verifiable basis. In the event actual mileage is not computable by other means, yard switching miles may be computed at the rate of 6 mph for the time actually engaged in yard switching service.

**train or yard crew**

One or more railroad employees assigned a controlling locomotive, under the charge and control of one crew member; called to perform service covered by Section 2 of the Hours of Service Act; involved with the train or yard movement of railroad rolling equipment they are to work with as an operating crew; reporting and working together as a unit that remains in close contact if more than one employee; and subject to the railroad operating rules and program of operational tests and inspections required in 49 CFR 217.9 and 217.11.

**train order**

Mandatory directives issued as authority for the conduct of a railroad operation outside of yard limits.

**trainability**

The capacity for being trained on a given task within a reasonable period of time.

**training**

The act of providing or receiving instruction on certain tasks, requirements, specifications, or any combination of these to ensure adequate, safe, and/or proper performance.

**training aid**

Any device or item developed, acquired, or used primarily for assistance in training.

**training allowance**

A compensation in time allowance, performance expectations, or rate of pay due to an experienced employee taking time to train an inexperienced or new worker.

**training time**

That total amount of time involved in training a new worker or a worker being taught a new task.

**trainmen**

Persons (men or women) employed as engineers and motormen, fire fighters and helpers, conductors, brakemen and flagmen engaged in passenger, freight, yard, or work service and train baggage men. Prior to 1984 this category did not include hostlers. The Interstate Commerce Commission revised the occupational groupings in 1984 and now includes hostlers in the train and engine category.

**trainship**

A vessel other than a rail car ferry or carfloat, specially equipped to transport railroad vehicles, and fitted with installed securing devices to tie down each vehicle.

**trait**

Any psychological or physical characteristic of an individual or group.

**trajectory**

The ballistic path taken by the body as a whole, by a point on the body, or of an object released from the body.

**tramp**

An oceangoing vessel that does not operate along a definite route or on a fixed schedule, but rather calls at any port where cargo is available.

**tramp line**

An ocean carrier company operating tramp steamers not on regular runs or schedules.

**tramway**

Another name for *light rail*.

**tranquilizer**

Any of a group of compounds that calm or quiet an anxious person without causing the drowsiness produced by sedatives or the stimulation produced by antidepressants.

**transarthral**

Meaning across a joint.

**transcutaneous electrical nerve stimulation (TENS)**

The electrical stimulation of nerves and muscles from electrodes placed on the skin.

**transducer**

A device, such as a photocell or piezoelectric crystal, that converts input energy of one form into output energy of another form.

**transfer capability**

The overall capacity of interregional or international power lines, together with the associated electrical system facilities, to transfer power and energy from one electrical system to another.

**transfer center**

*Transit.* A fixed location where passengers interchange from one route or vehicle to another.

**transfer charge**

*Transit.* An extra fee charged for a transfer to use when boarding another transit vehicle to continue a trip.

**transfer function**

A mathematical relationship between the input and output of a system. Usually a function of frequency.

**transfer of control**

*Aviation.* The action whereby control responsibility for an aircraft is transferred from one controller to another.

**transfer of training**

The phenomenon in which the training, knowledge, and/or information acquired previously on one task affects an individual's ability to be trained later on another task.

**transfer piping**

A system of permanent and temporary piping used for transferring hazardous fluids between any of the following: liquefaction process facilities, storage tanks, vaporizers, compressors, cargo transfer systems, and facilities other than pipeline facilities.

**transfer station**

As pertains to solid wastes: A site at which solid wastes are concentrated for transport to a processing facility or land disposal site. A transfer station may be fixed or mobile.

**transfer system**

Includes transfer piping and cargo transfer system.

**transference**

(1) The passage of a symptom or affection from one part to another. (2) In psychiatry, the shifting of an affect from one person to

another or from one idea to another; especially the transfer by the patient to the analyst of emotional tones, of either affection or hostility, based on unconscious identification.

**transform**

To systematically modify a set of values or an equation to change the form of the relationship. Often used to convert power or logarithmic functions to linear functions.

**transformation**

The process of placing new genes into a host cell, thereby inducing the host cell to exhibit functions encoded by the DNA.

**transformer**

An electrical device for changing the voltage of alternating current.

**transfusion**

Introduction into the body circulation of blood or other fluid. Among the solutions employed are whole blood, plasma, serum, and various artificial blood substitutes. Blood transfusions are used to replenish the depleted blood supply of the body in cases of hemorrhage, burns, injuries to blood vessels, shock during surgery, and certain blood dyscrasias such as anemia and leukemia.

**transient**

Something lasting only a short period of time.

**transient response**

A brief phenomenon caused by a sudden change in system conditions.

**transient sounds**

Sounds whose average level does not remain constant with time.

**transillumination**

The indirect illumination of an object or structure via light transmitted through a translucent object.

**transit**

(1) *General*. Another name for *public transportation*. (2) *Maritime Navigation*. A partial or complete up-bound or down-bound passage of a vessel through one or more locks of a Seaway canal.

**transit bus**

A bus designed for frequent stop service with front and center doors, normally with a rear-mounted diesel engine, low-back seating, and without lug\_\_\_\_\_ storage compartments or

rest room facilities. Includes motor bus and trolley coach. *See also* **intercity bus, motor bus, motorbus, school and other nonrevenue bus**.

**transit mall**

A type of exclusive right-of-way reserved for transit vehicles in revenue service and pedestrian traffic.

**transit mode**

Generally defined as urban and rural public transportation services including commuter trains, ferry service, heavy rail (rapid rail) and light rail (streetcar) transit systems, and local transit buses and taxis. *See also* **rail mode, rapid rail, rapid transit rail, transit railroad, and transit railway**.

**transit of an inland waterways transport (IWT) vessel**

Any laden or unladen IWT vessel which has entered and left the country at different points by whatever means of transport provided the total journey within the country was by inland waterway and that there has been no loading or unloading operation in the country.

**transit property**

All facilities which are directly controlled by a transit agency (agency is responsible for cleaning or maintaining) or provided to a transit agency for its use by another public or private entity (formal/informal agreement with the owner wherein services or facilities are provided to benefit the transit agency). This includes stations, exclusive right-of-ways, bus stops, and maintenance facilities.

**transit property damage**

Any damage to transit property that requires the repair or replacement of transit agency vehicles or facilities (track, signals, buildings) to a state equivalent to that which existed prior to the incident.

**transit railroad**

Includes heavy and light transit rail. Heavy transit rail is characterized by exclusive rights-of-way, multi-car trains, high speed rapid acceleration, sophisticated signaling, and high platform loading. Also known as subway, elevated railway, or metropolitan railway (metro). Light transit rail may be on exclusive or shared rights-of-way, high or low platform loading, multi-car trains or single cars, automated or manually operated. In ge-



neric usage, light rail includes streetcars, trolley cars, and tramways. *See also rail mode, rapid rail, rapid transit rail, transit mode, and transit railway.*

**transit railway**

Suburban and urban railway (including light rail such as trolleys, cable cars, and car lines) used only for transporting people. *See also rail mode, rapid rail, rapid transit rail, transit mode, and transit railroad.*

**transit system**

An organization (public or private) providing local or regional multi-occupancy-vehicle passenger service. Organizations that provide service under contract to another agency are generally not counted as separate systems.

**transit trip**

A one-way trip by a transit vehicle in revenue service starting at one terminal point of a route and ending at another terminal point. A round trip is counted as two separate trips. In the case where the route is a pure loop involving entirely different streets and pick-up points, and where there is no logical way to identify the terminal points, then traversing of the loop can be regarded as a single trip.

**transit zones**

A form of free trade zone. They are ports of entry in coastal countries that are established as storage and distribution centers for the convenience of a neighboring country lacking adequate port facilities or access to the sea. A transit zone is administered so that goods in transit to or from the neighboring country are not subject to the customs duties, import controls, or many of the entry and exit formalities of the host country.

**transitway**

A dedicated right-of-way, most commonly in a mall, that is used by transit units (vehicles or trains), usually mixed with pedestrian traffic. Also called *high-occupancy vehicle lane*.

**translate**

(1) To move from point to point along some path. (2) To convert some text/language, entity, or format from one type into another.

**translatory pedal**

A foot-operated device which operates by simple linear motion in an in-and-out pattern.

**translucent**

Allowing a portion of the light incident on a material to pass through as diffused light.

**transmissibility**

The ratio of the response amplitude to the excitation amplitude in a steady-state, forced vibration system.

**transmission**

(1) *Physiology*. The direct (contact or drop-let-spread) or indirect (vectorborne, vehicle-borne, or airborne) transfer of an infectious agent from a source to a susceptible host. (2) *Physics*. The process of passing through a medium without a change in frequency and/or wavelength.

**transmission coefficient**

The ratio of the transmitted wave intensity to the incident wave intensity at a boundary or discontinuity.

**transmission electron microscope (TEM)**

A microscope which utilizes an electron beam that is focused on a sample to produce an image showing differences in density of the sample material on a fluorescent screen from which the sample can be identified, and counted when fibrous.

**transmission gas company**

A company which obtains at least 90 percent of its gas operating revenues from sales for resale and/or transportation of gas for others and/or main line sales to industrial customers and classifies at least 90 percent of mains (other than service pipe) as field and gathering, storage and/or transmission.

**transmission lag**

A temporal delay due to processing in which the output signal emerges identical to the input except for the time shift.

**transmission loss**

(1) *General*. The decrease in amplitude, intensity, or other measure of energy as that form of energy passes through some structure or medium. (2) *Acoustics*. The reduction in noise when a diffuse noise field is generated on one side of a test panel (e.g., a side of a room) and the noise determined on the opposite side of the panel. The transmission loss of the panel material can be calculated from this data and the measurement of the sound absorption of the room.



**transmission network**

A system of transmission or distribution lines so cross-connected and operated as to permit multiple power supply to any principal point.

**transmission pipeline**

Pipelines (mains) installed for the purpose of transmitting gas from a source or sources of supply to one or more distribution centers, or to one or more large volume customers, or a pipeline installed to interconnect sources of supply. In typical cases, transmission lines differ from gas mains in that they operate at higher pressures, are longer, and the distance between connections is greater.

**transmission time**

The length of that temporal interval from the transmission of a signal to reception of that signal.

**transmission type**

The transmission is the part of a vehicle that transmits motive force from the engine to the wheels, usually by means of gears for different speeds using either a hydraulic "torque-converter" (automatic) or clutch assembly (manual). On front-wheel drive cars, the transmission is often called a *transaxle*. Fuel efficiency is usually higher with manual rather than automatic transmissions, although modern, computer-controlled automatic transmissions can be efficient.

**transmit**

To send a message or other information via some communication system.

**transmittance**

The fraction of incident light that is transmitted through a medium of interest.

**transmitted light**

That light emerging from the surface of an object on a non-illuminated side.

**transmitter**

See *neurotransmitter*.

**transonic**

Pertaining to those velocities/speeds near that of sound.

**transparent**

(1) Permitting the passage of most incident light though an object without significant diffusion. (2) An operation or processing sequence which the user doesn't observe when using a system.

**transpiration**

The process by which water vapor is lost to the atmosphere from living plants. The term can also be applied to the quantity of water thus dissipated.

**transponder**

(1) *General*. A piece of equipment which, when set upon a specific radio frequency, emits a directional signal of its own and enables the receiver to track or monitor a vehicle's location. (2) *Aviation*. The airborne radar beacon receiver/transmitter portion of the Air Traffic Control Beacon System that automatically receives radio signals from interrogators on the ground and selectively replaces with specific reply pulse-on-pulse group only those interrogations being received on the mode to which it is set to respond. Each aircraft transponder is capable of replying to 4,096 codes as selected by the pilot. Provides the air traffic controller positive location and, in some cases, altitude information.

**transport**

Movement of natural, synthetic, and/or supplemental gas between points beyond the immediate vicinity of the field or plant from which it was produced except a) for movements through well or field lines to a central point for delivery to a pipeline or processing plant within the same state or b) movements from a city gate point of receipt to consumers through distribution mains.

**transport airport**

An airport designed, constructed, and maintained to serve airplanes in Aircraft Approach Categories C and D.

**transport empty**

A work element in which a hand or container is moved without contents.

**transport loaded**

A work element in which a hand or container is moved with some contents.

**transport-related expenses**

All expense items applicable to the generation of transport-related revenues.

**transport revenue**

Revenues from the transportation by air of all classes of traffic in scheduled and nonscheduled services.

**transport vehicle**

A cargo-carrying vehicle such as an automobile, van, tractor, truck, semitrailer, tank car, or rail car used for the transportation of cargo by any mode. Each cargo-carrying body (trailer, rail car, etc.) is a separate transport vehicle.

**transport velocity**

The velocity needed to prevent the settling of airborne dusts or other particulates in the ductwork of a ventilation system. Also referred to as *minimum design duct velocity*.

**transportable x-ray**

X-ray equipment installed in a vehicle or that may readily be disassembled for transport in a vehicle.

**transportation**

The movement of goods and/or people.

**transportation administration and support**

All activities associated with transportation administration, revenue vehicle movement control and scheduling including supervision and clerical support.

**transportation agreement**

Any contractual agreement for the transportation of natural and/or supplemental gas between points for a fee.

**transportation bill**

The bill refers to the market value of all purchases of transportation services and facilities; it includes all domestic expenditures made by an economy for transportation purposes. Although the transportation bill does not reflect several significant non-market costs, it is a useful indicator of a country's transportation expenditures, and transportation analysts closely follow changes in the bill and its components.

**transportation brokerage**

(1) Coordination of transportation services in a defined area. The transportation broker may centralize vehicle dispatch, record keeping, vehicle maintenance, and other functions under contractual arrangement with agencies, municipalities, and other organizations. (2) A method of matching travelers with a variety of transportation providers through use of central dispatching and administrative facilities.

**transportation improvement program**

As stated in FHWA-UMTA joint regulations that govern transportation programming, a prioritized program of transportation projects to be implemented in appropriate stages over several years (i.e., 3-5 yr.). The projects are recommended from those in the transportation systems management element and the long-range element of the planning process. This program is required as a condition for a locality to receive federal transit and highway grants.

**transportation industry**

Those establishments or parts of establishments that build transportation facilities and equipment; operate transportation facilities; provide for-hire transportation services for individuals, households, businesses, or government agencies; provide supporting in-house transportation for a business or government agency; arrange transportation services for individuals, households, businesses, or government agencies; provide supporting services necessary to the provision of transportation services; or administer transportation programs. This definition includes a diverse cross-section of the economy, such as automobile manufacturers, railroads, travel agents, school district bus operators, port authorities, gas stations, and the trucking fleets of major grocery chains.

**transportation interface and reporting system (TIRES)**

Processes all income earned and expenses incurred in operating the Interagency Fleet Management System. TIRES produces profit and loss reports as well as other detail reports for output to FSS. Sales transactions are generated for input into the Automotive Billing (AUTOBILL) module.

**transportation management area (TMA)**

An urbanized area with a population over 200,000 (as determined by the latest decennial census) or other area when TMA designation is requested by the Governor and the Metropolitan Planning Organization (MPO), or affected local officials, and officially designated by the administrators of the FHWA and the FTA. The TMA designation applies to the entire metropolitan planning area(s).

**transportation-related release**

A release of a hazardous substance during transportation or storage if the stored substance is moved under manifest and has not reached its designated destination.

**transportation research information services (TRIS)**

The Transportation Research Board (TRB)-maintained computerized storage and retrieval system for abstracts of ongoing and completed research, development, and technology transfer (RD&T) activities, including abstracts of RD&T reports and articles.

**transportation sector**

The transportation sector consists of private and public vehicles that move people and commodities. Included are automobiles, trucks, buses, motorcycles, railroads and railways (including streetcars), aircraft, ships, barges, and natural gas pipelines. Consists of both private and public passenger and freight transportation, as well as government transportation, including military operations.

**transporter**

(1) Under the Comprehensive Environmental Response, Compensation, and Liabilities Act (CERCLA): One who accepts or accepted any hazardous substances for transport to disposal or treatment facilities or sites selected by such person. (2) The party or parties, other than buyer or seller, owning the facilities by which gas or liquefied natural gas (LNG) is physically transferred between buyer and seller.

**trans-shipment**

(1) The transfer of goods from one carrier to another. (2) A method of ocean transportation whereby ships off-load their oil cargo to a deepwater terminal, floating storage facility, temporary storage, or to one or more smaller tankers from which or in which the oil is then transported to a market destination.

**transuranic waste**

Under the Federal Atomic Energy Act of 1954: Material contaminated with elements that have an atomic number greater than 92, including neptunium, plutonium, americium, and curium, and that are in concentrations greater than 10 nanocuries per gram, or in such other concentrations as the Nuclear Regulatory Commission may prescribe to protect the public health and safety.

**transuranium elements**

Nuclides having an atomic number greater than that of uranium (i.e., 92) and which are not found naturally and are produced by nuclear bombardment. Also referred to as *transuranic elements*.

**transverse**

(1) Perpendicular to the longitudinal axis of the body or of a body segment. Horizontal if the body is standing erect or the body segment is vertical. (2) Perpendicular to the ground or reference surface (i.e., horizontal).

**transverse dorsal ligament**

See *extensor retinaculum*.

**transverse g**

An acceleration vector directed perpendicular to the frontal plane of the body in a reclining or lying posture.

**transverse pelvic breadth**

See *biiliocristale breadth*.

**transverse plane**

(1) A plane perpendicular to the longitudinal axis of the body or body segment. Horizontal plane if the body is erect or the body segment vertical. (2) A plane parallel to the ground or reference surface.

**Transverse Ranges**

*Seismology*. The mountains formed by compression associated with the Big Bend of the San Andreas fault zone, primarily the San Gabriel and San Bernardino Mountains. They are called *transverse* because they stretch east-west, unlike the north-south trending Sierra Nevada, Peninsular Ranges, and the mountains of the Basin and Range provinces. Thus, they are transverse to most other California mountains and to the overall tectonic motion at this plate boundary.

**trap circuit**

A term applied to a circuit used where it is desirable to provide a track circuit but where it is impracticable to maintain a track circuit.

**trapezium**

One of the distal bones in the wrist, also referred to as the *greater multiangular bone*.

**trapezius**

A broad, flat muscle in the upper back and posterior neck.

**trapezoid bone**

One of the distal bones in the wrist, also called the *lesser multiangular bone*.

**trapezoidal approximation**

The use of the trapezoid area formula for computing the area under a small portion of a curve in integration.

**trash-to-energy plan**

A plan for putting waste back to work by burning trash to produce energy.

**trauma**

A wound or injury. Any physical or mental injury induced by an external force or agent.

**travel advisory program**

The Department of State manages a travel advisory program which publicizes a) travel warnings which are issued when State decides to recommend that Americans avoid travel to a certain country and b) consular information sheets, issued for every country, which advise travelers of health concerns, immigration and currency regulations, crime and security conditions, areas of unrest or instability, and the location of U.S. embassies or consulates.

**travel agencies**

Establishments primarily engaged in furnishing travel information and acting as agents in arranging tours, transportation, rental of cars, and lodging for travelers.

**travel blanks**

Container filled with deionized (DI) water that should accompany each container or sample.

**travel chart**

A set of quantitative data, arranged in tabular form, on the movements of workers, materials, and/or equipment between workplaces.

**travel day**

A 24-hour period from 4:00 a.m. to 3:59 a.m. designated as the reference period for studying trips and travel by members of a sampled household.

**travel day trip**

A travel day trip is defined as any one-way travel from one address (place) to another by any means of transportation (e.g., private motor vehicle, public transportation, bicycle, or walking). When travel is to more than one destination, a separate trip exists each time

one or both of the following criteria is satisfied: the travel time between two destinations exceeds 5 minutes, and/or the purpose for travel to one destination is different from the purpose for travel to another. The one exception is travel within a shopping center or mall. It is to be considered travel to one destination, regardless of the number of stores visited.

**travel density**

The average number of vehicle miles driven on a section of highway each day divided by the length of the section in miles. It is expressed as a number of vehicles and may be referred to as average daily traffic (ADT).

**travel period**

The 13 days immediately preceding the travel day and the designated travel day for a sampled household, for a total of 14 days.

**travel period trip**

A travel period trip is one-way to a destination which is 75 miles or more from home with a return home trip during the 14-day travel period. Travel to the destination is counted as one trip and travel to return home is counted as another trip. For example, a person living in Denver flies to San Francisco, stays one week, and returns to Denver during the 14-day travel period. This would be counted as two travel period trips (one outgoing and one return). The only time a travel period trip would not have a return trip collected is when the respondent moves his/her residence.

**travel surface**

The type of material which forms the travel surface. Codes as follows: AG-aggregate, B-bituminous, C-concrete, CA-caliche, N-natural (graded and drained), NU-natural unimproved (wheel tracks, O.R.V.).

**travel time**

That time required for personnel, materials, equipment, or hardcopy to move or be moved from one location to another.

**traveler**

A person who stays for a period of less than 1 year in a country of which he or she is not a resident. Military and other government personnel and their dependents stationed outside their country of residence are not considered travelers, regardless of the length of their stay abroad; they are considered to have remained

within the economy of their home country. The definition of travelers also excludes owners or employees of business enterprises who temporarily work abroad to further the enterprise's business, but intend to return to their country of residence within a reasonable period of time.

**traveling water screen (TWS)**

An automatically cleaned screening device employing chain-mounted wire mesh panels to remove floating or suspended solids from a channel of water. Also referred to as *band-screen*.

**tread**

(1) The horizontal member of a step. (2) Distance between the centers of tires at the points where they contact the road surface. Duals are measured from the center of dual wheels.

**tread depth**

The depth of an individual step on a stair, including the overhang.

**tread run**

The horizontal distance from the front to the back of tread, including nosing when used.

**tread width**

The horizontal distance from front to back of tread, including nosing when used.

**treadmill**

A device consisting of a motor- or human-driven belt on which an individual walks, jogs, or runs at certain velocities and/or inclination angles.



*Treadmills are a very popular exercise device primarily improving cardiovascular health and increasing stamina (when used properly)*

**treasury stock**

*Aviation.* The cost of reacquired capital stock issued by the air carrier and not retired or cancelled.

**treatment**

A broad term covering all the steps taken to effect a cure of an injury or disease; including examination and diagnosis as well as application of remedies.

**treatment facility**

Under the Resource Conservation and Recovery Act (RCRA): A facility will be considered a "treatment facility" if the operator utilizes any method, technique, process designed to change the physical, chemical, or biological character or composition of any hazardous waste so as to neutralize such waste, to recover energy or material resources from the waste, to render the waste nonhazardous or less hazardous, safer to transport, store or dispose of, or amenable for recovery, amenable for storage, or reduced in volume.

### **treatment of hazardous waste**

(1) The process of reducing the volume and/or toxicity of a hazardous waste or material. Treatment may include detoxification or reductions in toxicity below maximum discharge limits thus allowing release directly into the environment. (2) Any method, technique, or process, including neutralization, designed to change the physical, chemical, or biological character or composition of any hazardous waste so as to neutralize such waste or so as to render such waste nonhazardous, safer for transport, amenable for recovery, amenable for storage, or reduced in volume. Such term includes any activity or processing design to change the physical form or chemical composition of hazardous waste so as to render it non-hazardous.

### **treatment, storage and disposal facility (TSDF)**

The name the EPA assigns to facilities that are licensed to transfer, treat, store, or dispose of regulated hazardous wastes. A TSD permit is the document assigned by regulators for specific locations allowing the TSDF to perform the function permitted on the form. Holders of TSDF permits do not necessarily perform actual final treatment or disposal services but may also store wastes for eventual shipment to other facilities. TSDFs are regulated by the EPA and the states under RCRA.

### **treatment works**

According to the Federal Water Pollution Control Act: Any devices and systems used in the storage, treatment, recycling, and reclamation of municipal sewage or industrial wastes of a liquid nature to implement the Federal Water Pollution Control Act or necessary to recycle or reuse water at the most economical cost over the estimated life of the works, including intercepting sewers, outfall sewers, sewage collection systems, pumping, power, and other equipment and their appurtenances; extensions, improvements, remodeling, additions, and alterations thereof; elements essential to provide a reliable recycled supply such as standby treatment units and clear well facilities; and any works, including site acquisition of the land that will be an integral part of the treatment process (including land used for the storage of treated

wastewater in land treatment systems prior to land application) or is used for ultimate disposal of residues resulting from such treatment.

### **treaty**

A type of international agreement between sovereign nations with both Executive and Legislative approval. Lesser agreements include *conventions*. An agreement between states of the United States might be a *compact*.

### **treble**

Pertaining to or enhancing the higher auditory frequencies in a sound system.

### **treble damages**

Damages given by statute in certain types of cases, consisting of the single damages found by the jury, actually tripled in amount.

### **tremor**

(1) *Seismology*. A shaking sensation in the earth's crust that can be either dramatic (violent) or subtle. It is usually associated with an earthquake event and can occur either before or after the event. (2) *Physiology*. An involuntary movement in which continuous rhythmic oscillations, usually of a smaller amplitude and higher frequency than volitional movements, occur between opposing, normally voluntary muscles at one or more points of the body.

### **trench foot**

Effect on the feet, resembling frostbite, as a result of prolonged standing, relatively inactively, with wet feet in a cold environment.

### **trenches**

Floor drains which may be used to discharge hazardous waste; also called pits.

### **trend**

A directional tendency for a dataset relative to time or other variable.

### **trend analysis**

The use of statistical techniques in the evaluation of historical or other data for the determination and/or quantification of any periodicity, correlation, or predictor.

### **trend forecasting**

See *steady-state forecast*.



**trespass**

Intentional, unprivileged entry onto the land of another.

**trespasser**

*Rail Operations.* Any person whose presence on railroad property, used in railroad operation, is prohibited or unlawful.

**Trespassers (Class E)**

*Rail Operations.* Persons who are on that part of railroad property used in railroad operation and whose presence is prohibited, forbidden, or unlawful.

**trestle ladder**

A self-supporting portable ladder, nonadjustable in length, consisting of two sections hinged at the top to form equal angles with the base. The size is designated by the length of the side rails measured along the front edge.

**trial**

(1) The stage of civil litigation or criminal prosecution where evidence is presented in court for the tribunal to decide the case "on the merits." A trial occurs if the matter has not previously been resolved by *negotiation*, *motion for summary judgment*, or *motion to dismiss* about various defenses. (2) A single event during an experimental session in which one or more subjects are presented with a stimulus set and the response set is recorded. (3) A temporary period of testing or evaluation of an individual or product prior to a formal commitment.

**trial and error**

Pertaining to a blind, initially random, uninformed search for the correct solution or a path to that solution.

**trial and error learning**

The process of narrowing a wide range of possible responses through feedback to the one response or the set of responses which is most appropriate for a given situation.

**triangular bone**

One of the proximal row of bones in the wrist, also called the *triquetral bone*.

**triaxle**

A three-axle tractor or trailer.

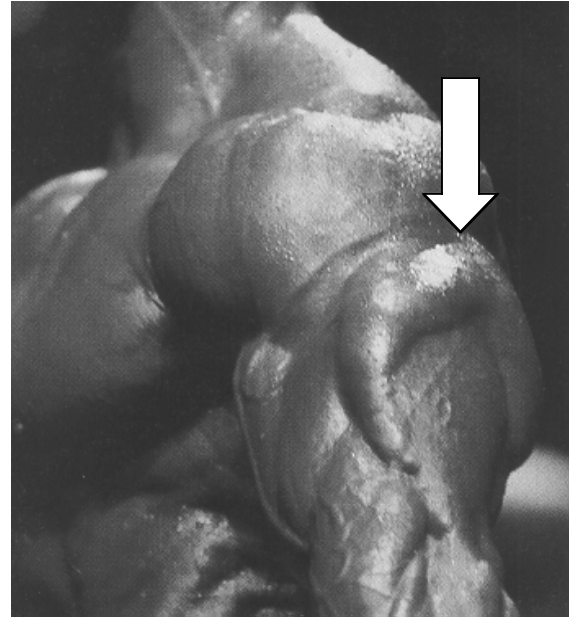
**tribal lands**

Lands of Indian reservation which are not allotted to or occupied by individual Indians

but rather the unallotted or common lands of the nation.

**triceps**

A large, three-headed, voluntary muscle on the lateral posterior upper arm.



*Extremely well-developed triceps muscle (at arrow)*

**triceps skinfold**

The thickness of a vertical skinfold on the midline of the posterior arm halfway between acromion and the lower tip of olecranon, the point determined as for the arm circumference measure. Measured with the individual standing erect and the arms hanging naturally at the sides.

**triceps skinfold, recumbent**

The reclining triceps skinfold measure. Measured with the individual lying on his/her side such that the right and left acromial processes are perpendicular to the bed/table surface and the arm is lying against the side of the body.

**trichloroethylene (TCE)**

A stable, low boiling, colorless liquid, toxic by inhalation. TCE is used as a solvent, metal degreasing agent, and in other industrial applications.

**trichromat**

An individual with normal color vision.

**trichromatic coefficients**

See *chromaticity coordinate*.

**trichromatic theory**

A color vision theory based on the concept that any hue may be derived from an appropriate mixture of three primary colors.

**trichromatopsia**

The condition or state of having normal color vision. *See also* [trichromat](#).

**trickling filter**

A coarse, biological treatment system in which wastewater is trickled over a bed of stones or other material covered with bacterial growth.

**tridymite**

A form of free silica formed when quartz is heated to 1598°F (870°C).

**trigeminal nerve**

The fifth cranial nerve, containing motor fibers, which are involved in hearing and mastication, and sensory fibers, which convey touch, pain, and temperature from the facial region.

**trigger finger**

An occupational cumulative trauma disorder (CTD) in which a tendon in the index finger is compressed from exterior swelling. The condition can be produced by repeatedly pulling a trigger or by using hand tools that have sharp edges that press into the tissue or whose handles are so far apart that only the end segments of the user's hand grasp them, while the middle segments remain straight.

**triggered fault**

*Seismology.* A somewhat poorly understood process; involves the slipping of a fault located in the same region as, but not directly associated with, a fault which ruptures in a major earthquake. Most likely, the shaking of the ground during an earthquake causes minor slippage along temporarily "loosened" faults.

**triglyceride**

A chemical combination of three fatty acids and a glycerol molecule.

**trigonometry**

The study and measurement of triangles and the relationships of their components.

**trihalomethane (THM)**

One of a family of organic compounds named as a derivative of methane. THMs are generally the byproduct from the chlorination of drinking water that contains organic materials.

**trill**

A consonant produced by the rapid vibration of one or more articulators.

**trim**

To remove some proportion of the values at the extremes in a dataset before processing the data.

**trip**

(1) *General.* The process of falling forward after the toe or some other portion of the foot strikes an object above the normal surface elevation which impedes the foot's forward motion. (2) *Transit.* That travel from one point to another. (3) *Rail Operations.* A movement of a locomotive over all or any portion of automatic train stop, train control, or cab signal territory between the terminals for that locomotive; a movement in one direction. *See also* [transport](#), [transportation](#), and [travel](#).

**trip assignment**

In planning, a process by which trips, described by mode, purpose, origin, destination, and time of day, are allocated among the paths or routes in a network by one of a number of models.

**trip distribution**

In planning, the process of estimating movement of trips between zones by using surveys or models.

**trip frequency**

The number of instances in which a trip is made from one point to another within a unit time.

**trip hazard**

Any object projecting above the typical level surface over which an individual may trip when walking.

**tripodal grasp**

A type of grasp where an object is held by the combination of the index finger, middle finger, and the thumb, with the object possibly extending toward or touching the palm.

**triquetral bone**

*See* [triangular bone](#).

**TRIS**

*See* [Toxic Release Inventory System](#). *See also* [transportation research information services](#).

**trisomy 21**

*See* [Down's syndrome](#).

**tristimulus colorimeter**

A colorimeter which provides tristimulus values on measuring a color.

**tristimulus value**

The amount of each of the three primary colors, represented by magnitudes of X, Y, and Z, which are used by a CIE Standard Observer to match a given color. Also referred to as *spectral tristimulus value and color matching function*.

**tritanomaly**

A form of color vision deficiency involving a reduced ability to discriminate blue colors within stimuli.

**tritanopia**

A form of color blindness involving an inability to discriminate blue colors due to the absence or nonfunction of the blue cone in the retina. Also referred to more commonly as *blue blindness*.

**trochanter – knee – ankle line (TKA line)**

An imaginary straight line from the trochanter, through the knee, to the ankle, which approximates the body weight support axis when standing erect.

**trochanteric height**

The vertical linear distance from the floor or other reference surface to trochanterion. Measured with the individual standing erect and his/her body weight distributed equally on both feet.

**trochanterion**

The most superior lateral point on the greater trochanter of the femur.

**trochlea**

A bone structure, rounded and depressed in the middle and high on both sides, at the anterior distal end of the humerus for articulating with the ulna at the elbow.

**trochlear nerve**

The fourth cranial nerve, containing both motor fibers, which innervate the superior oblique muscle of the eye, and sensory fibers, which convey proprioception from that eye muscle.

**trochlear notch**

A large, crescent-shaped depression in the proximal ulna for articulation with the humerus.

**troffer**

A long, recessed lighting unit, typically placed so the opening is flush with the ceiling surface.

**troland**

A unit of retinal illuminance; equal to the value of the ratio of the luminance of a surface or light source in  $\text{cd/m}^2$  to the area of the pupil in  $\text{mm}^2$  (originally called a photon – now obsolete usage since photon has another meaning).

**trolley brake**

A hand valve used to operate the trailer brakes independently of tractor brakes.

**trolley car**

Another name for *light rail*.

**trolley coach**

Rubber-tired electric transit vehicle, manually steered, propelled by a motor drawing current, normally through overhead wires, from a central power source not on board the vehicle.

**trolley ladder**

A semi-fixed ladder, nonadjustable in length, supported by attachments to an overhead track, the plane of the ladder being at right angles to the plane of motion.

**trolley replica**

A type of vehicle having the appearance of a trolley or streetcar but has rubber tires and is powered by a diesel, gasoline, propane, or alternative fuel engine contained within the vehicle. Trolley replicas are classified as motor bus mode in the NTD system.

**trolleybus**

Rubber-tired passenger vehicles operating singly on city streets. Trolleybuses are driven electrically with the power being drawn from an overhead electric line via trolleys.

**tropical climate**

A climate having generally high temperatures and humidity through much of the year, with high rainfall amounts during at least part of the year.

**tropical depression**

A mass of thunderstorms and clouds generally with a cyclonic wind circulation of between 20 and 34 knots.

**tropical disturbance**

An organized mass of thunderstorms with a slight cyclonic wind circulation of less than 20 knots.

**tropical rain forest**

A type of forest consisting mainly of lofty trees and a dense undergrowth near the ground.

**tropical storm**

Organized thunderstorms with a cyclonic wind circulation between 35 and 64 knots.

**tropopause**

The boundary between the troposphere and the stratosphere.

**tropopause jets**

Jet streams found near the tropopause, such as the polar front and subtropical jet streams.

**troposphere**

The lower atmosphere, the portion of the atmosphere between seven and ten miles above the Earth's surface where clouds are formed.

**trough**

An elongated area of low atmospheric pressure.

**truck**

(1) Any self-propelled motor vehicle except a truck tractor, designed and/or used for the transportation of property. (2) A motor vehicle with motive power, except a trailer, designed primarily for the transportation of property or special purpose equipment. (3) A motor vehicle designed to carry an entire load. It may consist of a chassis and body; a chassis, cab and body; or it may be of integral construction so that the body and chassis form a single unit.

**truck crash**

A motor vehicle crash in which at least one medium or heavy truck is involved. *See also accident, crash, collision, and incident.*

**truck inventory and use survey**

Survey designed to collect data on the characteristics and operational use of the nation's truck population. It is conducted every five years by the U.S. Bureau of the Census. Surveys were conducted in 1963, 1967, 1972, 1977, 1982, 1987, and 1992.

**truck size classification**

U.S. Bureau of the Census has categorized trucks by gross vehicle weight (GVW) as follows: a) Light – Less than 10,000 pounds GVW. b) Medium – 10,001 to 20,000 pounds GVW. c) Light-heavy – 20,001 to 26,000 pounds GVW. d) Heavy-heavy – 26,001 pounds GVW or more.

**truck tractor**

A truck or self-propelled motor vehicle designed and/or used primarily for drawing other motor vehicles and not so constructed as to carry a load other than a part of the weight of the vehicle and the load so drawn.

**truck-tractor semitrailer-semitrailer**

The two trailing units are connected with a "B-train" assembly. The B-train assembly is a rigid frame extension attached to the rear frame of a first semitrailer which allows for a fifth wheel connection point for the second semitrailer. This combination has one less articulation point than the conventional "A dolly" connected truck-tractor semitrailer-semitrailer combination.

**truck-trailer boat transporter**

A boat transporter combination consisting of a straight truck towing a trailer typically using a ball and socket connection. The trailer axle(s) is substantially located at the trailer center of gravity (rather than the rear of the trailer) but so as to maintain a downward force on the trailer tongue.

**trucking (except local)**

Establishments primarily engaged in furnishing "over-the-road" trucking services or trucking services and storage services, including household goods either as common carriers or under special or individual contracts or agreements, for freight generally weighing more than 100 pounds. Such operations are principally outside a single municipality, outside one group of contiguous municipalities, or outside a single municipality and its suburban areas.

**truckload**

Quantity of freight required to fill a truck. When used in connection with freight rates, the quantity of freight necessary to qualify a shipment for a truckload rate. Usually in excess of 10,000 pounds.

**true airspeed**

The airspeed of an aircraft relative to undisturbed air. *See also airspeed.*

**true color**

The color in water caused by the presence of humic or fulvic acids that result from the decomposition of organic matter.

**true value**

That theoretically correct measurement of some characteristics of a system.

**trunk**

*See torso.*

**trunking**

A casing used to protect electrical conductors.

**trunnion**

A cylindrical projection supporting a revolving part.

**trust fund**

(1) Trust funds are funds that are designated by law as trust funds. They are usually financed by earmarked collections. A trust fund must use its income for the purposes designated by law, but it is not required to spend them all in the same period they are collected. For example, the five transportation-related federal trust funds are highways, which includes highway and transit accounts; airports and airways; aquatic resource, which is of interest because of the boat safety account; harbor maintenance; and inland waterways. There is also a pipeline safety fund; however, it is not a trust fund. (2) *See Superfund.*

**truth**

*Law.* There are three concepts as to what constitutes *truth*: agreement of thought and reality; eventual verification; and consistency of thought with itself.

**trybutilin**

*See organotin.* Also referred to as *TBT paint.*

**TSA**

*See taxiway safety area.*

**TSCA**

*See Toxic Substances Control Act.*

**TSCA Experimental Release Application (TERA)**

Application required under the Toxic Substances Control Act (TSCA) for persons engaged in research and development activities

that do not qualify under exemptions of the act.

**TSCA inventory**

Under the Toxic Substances Control Act (TSCA), the EPA must compile, keep current, and publish a list of chemical substances manufactured or processed for commercial purposes in the United States.

**TSDF**

*See treatment, storage, and disposal facility.*

**TSP**

*See total suspended particulate.* Also, acronym for *tri-sodium phosphate.*

**TSS**

*See total suspended solids.*

**TTS**

Temporary threshold shift. *See threshold shift.*

**tube and coupler scaffold**

An assembly consisting of tubing which serves as posts, bearers, braces, ties, and runners, a base supporting the posts, and special couplers which serve to connect the uprights and to join the various members.

**tuberosity**

A relatively large protuberance on a bone.

**tubular bone**

*See long bone.*

**tubular welded frame scaffold**

A sectional, panel, or frame metal scaffold substantially built up of prefabricated welded sections which consist of posts and a horizontal bearer with intermediate members. Panels or frames shall be braced with diagonal or cross braces.

**tug**

A small but powerful vessel designed for moving larger vessels or for towing barges. Also called *towboat* or *pushboat*. *See also towboat.*

**tug and barge combinations**

The assessment of tolls requires tugs and barges in common transit to be considered as one unit. In this report the number of transits shown under this category represents the number of combined passages plus the number of individual tugs transiting the seaway.

**tularemia**

An infectious disease caused by a bacterium that is transmitted to man by insects or by the handling of infected animals. Also called *rabbit fever*.

**tumor**

A swelling or abnormal mass of tissue that may or may not be malignant. A new growth of tissue in which the multiplication of cells is uncontrolled and progressive. Tumors grow faster than normal tissue, continuing after cessation of the stimuli that evoked the growth and serving no useful physiologic purpose. Also called a *neoplasm*.

**tumorigenic agent**

A substance which produces tumors.

**tundra**

A type of ecosystem dominated by lichens, mosses, grasses, and woody plants. Tundra is found at high latitudes (*arctic tundra*) and high altitudes (*alpine tundra*). Arctic tundra is underlain by permafrost and is usually very wet. See also *wetlands*.

**tuning fork test**

Any of several simple hearing tests performed with a tuning fork.

**tunnel**

(1) An enclosed passageway, as for trains, automobiles, and so on, through or under an obstruction, such as a city, mountain, river, or harbor. (2) An underground or underwater passage.

**tunnel entrance**

An opening that affords entry to an underground or underwater passage.

**tunnel vision**

Having a narrow field of vision. The term is also often used in a figurative sense to describe a person who only sees what he/she wishes to see in a given situation.

**turbidimeter**

A device that measures the amount of suspended solids in a liquid.

**turbidity**

The presence of suspended material, such as clay, silt, finely divided organic material, plankton, and other inorganic material, in water.

**turboclair**

A fog-clearing technique that uses hot gases from jet engines to heat the air and evaporate warm fog.

**turbulence**

Any irregular or disturbed flow in the atmosphere that produces gusts and eddies.

**turbulence loss**

These losses occur in a ventilation system whenever airflow changes direction or velocity and results in a pressure drop as the air flows through the ventilation system. Also referred to as *dynamic loss*.

**turbulent flow**

Exists when the fluid particles are moving in directions other than a straight line parallel to the axis of the pipe or duct.

**turbulent noise**

Noise caused by air or gas moving through the fan and the transport (duct/pipe) system.

**turn a tow**

To exchange tows, as when a towboat meets another towboat belonging to the same company proceeding in the opposite direction and they exchange their entire tows and return in the same direction from whence they came.

**turn key contract**

Term used in building trade to designate those contracts in which a builder agrees to complete the work of building and installation to the point of readiness for occupancy.

**turn signals**

Lamps used to indicate a change in direction by emitting a flashing light on the side of a motor vehicle toward which a turn will be made.

**turnaround time**

The period of time required to check out an item, service it if necessary, and return it to operating status.

**turning basin**

An area of water or enlargement of a channel used for the turning around of vessels.

**turning roadway**

A connecting roadway between two intersection legs that are at the same grade.

**turning shipping lane**

Area designated as a place for ships to turn.



**turning vane**

Curved strips of short radii placed in a sharp bend in a duct or at a fan entry to direct air around the bend in streamlined flow and thereby reduce turbulence losses. *See also [turbulence loss](#).*

**turnkey**

Pertaining to a system which is delivered and installed to be fully operational, such that the user has only to turn on the system to operate it.

**turnout**

(1) *Rail Operations.* The assembly of a switch and a frog with closure rails by which rolling stock or trains can travel from a track onto either one of two diverging tracks; also known as a track switch. Also, a short side track or passage that enables trains, automobiles, and similar vehicles to pass one another.  
(2) *Transit.* A short passing lane on a highway.

**turnover**

The process of having one or more employees leave of their own free will and having to replace them to maintain the desired operational performance level.

**turnpike double**

A combination vehicle consisting of a tractor and two trailers of 45 to 48 feet.

**turntable**

*Rail Operations.* A circular, horizontal, rotating platform equipped with a railway track, used for turning locomotives, as in a roundhouse.

**TVA**

*See [Tennessee Valley Authority](#).*

**TVOCs**

Total volatile organic compounds.

**TVS**

*See [tornado vortex signature](#).*

**TW**

*See [taxiway](#).*

**TWA**

*See [time-weighted average](#).*

**tweeter**

A loudspeaker designed for reproducing the higher audible sound frequencies, generally above 3 kHz.

**Twelfth Amendment**

Amendment to the U.S. Constitution (1804) which altered the method of voting in presidential elections by requiring each elector to vote for President and Vice President on separate ballots instead of voting for two persons for President on a single ballot as before.

**Twentieth Amendment**

The so-called lame duck Amendment to the U.S. Constitution (1933) which changed the beginning of Presidential and Vice-Presidential terms from March 4 to January 20, and of Congressional terms from March 4 to January 3, thereby eliminating the short session of Congress which had formerly convened early in December in even-numbered years, and in which a number of Congressmen sat who had not been re-elected to office. The Amendment also provides for Presidential succession under certain circumstances.

**Twenty-fifth Amendment**

Amendment to the U.S. Constitution (1967) which provides for filling a vacancy of the offices of President and Vice-President on the death, removal, or resignation of the office holders.

**Twenty-fourth Amendment**

Amendment to the U.S. Constitution (1964) which prohibits federal or state denial of the right to vote in any primary or other election for federal elective officers because if the prospective voter's failure to pay any poll tax or other tax.

**Twenty-second Amendment**

Amendment to the U.S. Constitution (1951) which prevents any person from being elected President more than twice, or, if he/she has succeeded to the Presidency before the midpoint of his/her predecessor's term, from being elected more than once.

**Twenty-sixth Amendment**

Amendment to the U.S. Constitution (1971) which established voting age at 18.

**Twenty-third Amendment**

Amendment to the U.S. Constitution (1961) which allots to the District of Columbia presidential electors, to be appointed as Congress directs, equal in number to those of a state with equivalent population but never more than the number of electors allotted to the least populous state.

**TWH**

See *terawatt hour*.

**twilight**

(1) That intermediate lighting level between daylight and dark during the period of each day before sunrise and after sunset. (2) The time immediately before sunrise and after sunset when the sky remains illuminated.

**twilight vision**

See *mesopic vision*.

**twill weave**

A weave pattern in which lines run diagonally to the length of the fabric.

**twin screw**

A truck or tractor with two rear axles, both driven by the engine.

**twin trailer**

A short semitrailer (under 29 feet) designed to be operated as part of a combination vehicle with a tandem trailer of similar length.

**twist**

To rotate a body segment about its longitudinal axis or some portion of the entire body about its (normally vertical) longitudinal axis.

**twist moment**

That combination of torques produced by contraction of various muscle groups and ground reaction forces to yield a twisting motion of some portion or all of the body.

**two-alternate, forced choice paradigm**

An experimental design in which a subject is presented with one of two stimulus alternatives on each trial of an experiment, and he/she must indicate which stimulus he/she believes was present.

**two-and-a-half D model**

The stacking of several two-dimensional components, each of which is composed of a cross-section of a three-dimensional object, to give a semblance of depth in the image.

**two-axle four-tire truck**

A motor vehicle consisting primarily of a single motorized device with two axles and four tires.

**two-hand controls**

A safety interlock control technique which requires the operator to have both hands on the control system, thus ensuring that the

hands will not be in the operational area while the machine is functioning.

**two-handed process chart**

A special case of a multiple activity process chart detailing by symbols, text, and/or graphics the individual and relative motions of the two hands or limbs in a workplace operation, generally for a repetitive task.

**two-interval, forced choice paradigm**

An experimental design in which a stimulus is presented to the subject in only one of two sequential time periods, and the subject must indicate which period he/she believes contained the stimulus.

**two-man rule**

A policy or procedure used in certain highly critical or hazardous situations in which two authorized individuals must be present at all times to ensure use of the correct procedures, to help each other, or to enable one to remove the other from the situation in the event of some accident.

**two-point suspension scaffold**

A scaffold, the platform of which is supported by hangers (stirrups) at two points, suspended from overhead supports so as to permit the raising or lowering of the platform to the desired working position by tackle or hoisting machines. Also referred to as a *swinging platform*.

**two-point threshold**

That minimal tactile separation distance on a given region of the skin which can be distinguished as two stimuli instead of one when two distinct stimuli are applied. Synonymous with *resolution acuity*.

**two-speed axle**

A rear axle with two ratios and a mechanism for selecting one or the other ratio, usually available with a standard type transmission. A double reduction axle which does not have a mechanism for selecting ratios is not a 2-speed axle.

**two-tailed test**

A non-directional statistical test of significance in which the null hypothesis should be rejected if the sample value is either greater or less than pre-established critical values.

**two-witness rule**

This rule requires that the falsity element of a perjury conviction be supported either by direct testimony of two witnesses or by the direct testimony of one witness plus independent corroborating evidence.

**TWS**

See [traveling water screen](#).

**tympanic cavity**

The chamber of the middle ear.

**tympanic membrane**

A thin, semitransparent tissue layer separating the outer ear from the middle ear and is involved in the transduction of airborne sound in hearing. See also *ear drum*.

**type**

(1) *General*. A block-bearing raised letter, or the impression of such a letter registered on a flat surface. (2) *Aviation*. a) As used with respect to the certification, ratings, privileges, and limitations of airmen, means a specific make and basic model of aircraft, including modifications thereto that do not change its handling or flight characteristics. Examples include DC-7, 1049, and F-27; and b) as used with respect to the certification of aircraft, means those aircraft which are similar in design. Examples include DC-7 and DC-7C; 1049G and 1049H; and F-27 and F27F; and c) as used with respect to the certification of aircraft engines, means those engines which are similar in design. For example, JT8D and JT8D7 are engines of the same type, and JT9D-3A and JT9D-7 are engines of the same type. (3) *Medical*. The general prevailing character, as of an individual or a particular case of disease.

**type I error**

An error in statistical judgment in which a true hypothesis is falsely rejected. See also *false alarm*.

**type II error**

An error in statistical judgment in which a false hypothesis is not rejected.

**type C respirator**

A respiratory protective device which is designed to provide protection to the wearer by providing clean air from a source outside the contaminated area.

**type of drive**

Refers to which wheels the engine power is delivered to, the so-called "drive wheels." Rear-wheel drive has drive wheels on the rear of the vehicle. Front-wheel drive, a newer technology, has drive wheels on the front of the vehicle. Four-wheel drive uses all four wheels as drive wheels, and is found mostly on Jeep-like vehicles and trucks, though it is becoming increasingly more common on station wagons and vans.

**type of occurrence**

The highest level of an accident classification mechanism known as the sequence of events. See also *accident*.

**type of primary service**

The dominant type of service the respondent uses at the service station. Response categories include Full-Service Pumps, Self-or Mini-Service Pumps, or Both Equally. Mini-Service is provided when attendants pump the vehicle fuel but do not provide any other service, such as checking the tire pressure or washing windshields.

**typeface**

A particular style or size of letter in printing or displays.

**types of goods carried by inland waterways**

The categories of goods carried by inland waterways are those defined by the NST/R (Standard Goods Nomenclature for Transport Statistics/revised EUROSTAT) or CSTE (UN-ECE Commodity Classification for Transport Statistics in Europe) nomenclatures.

**typhoid**

(1) Resembling typhus. (2) See [typhoid fever](#).

**typhoid fever**

A bacterial infection transmitted by contaminated water, milk, or other foods, especially shellfish. The causative organism is *Salmonella typhi*, harbored in human excreta. Entering the body through the intestinal tract, the typhoid bacillus starts multiplying in the bloodstream, causing fever and diarrhea. The usual incubation period is 7 to 14 days. Later, the bacilli localize in the intestinal tract or the gallbladder. The first symptoms of typhoid are headache, perhaps sore throat, and a fever that may reach 105°F. The temperature rises daily, reaching a peak in 7 to 10 days, main-

taining this level for about another week and then subsiding by the end of the fourth week. Periods of chills and sweating may occur, with loss of appetite. A watery, grayish or greenish diarrhea is common, but constipation sometimes occurs instead. After 2 weeks, red spots begin to appear on the chest and abdomen. If the case is severe, the victim may lapse into states of delirious muttering and staring into space. About the third to fourth week an improvement is noticeable, and steady recovery follows. The disease is serious and sometimes fatal. A person who has had typhoid fever gains immunity from it but may become a carrier. Although perfectly well, he/she harbors the bacteria and passes them out in feces and urine. The typhoid bacillus often lodges in the gallbladder of carriers, and when the gallbladder is removed the person may cease to be a carrier. Contamination is likely to occur if human feces are used to fertilize the crops (referred to as "night soil"), as they are in many lesser developed countries. *See also typhus.*

**typhoon**

A hurricane that forms in the western Pacific Ocean.

**typhus**

An acute infectious disease caused by species of the parasitic microorganism rickettsia. The organisms are usually transmitted from infected rats and other rodents to man by lice, fleas, ticks, and mites. Rickettsiae enter the human body through cuts or breaks in the skin made by the bites of the lice or other pests.

**typing**

Determination of the type of something, such as blood type.

**typing stick**

*See mouth stick.*

**tyramine**

A decarboxylation product of tyrosine with a similar (but weaker) action to that of epinephrine and norepinephrine, and capable of releasing stored norepinephrine.

**tyrosine**

A naturally occurring amino acid produced in the body in the metabolism of phenylalanine to melanin, epinephrine, and thyroxine.

**tyrosinosis**

A condition characterized by a faulty metabolism of tyrosine in which an intermediate product, parahydroxyphenyl pyruvic acid, appears in the urine and gives it an abnormal reducing power.

**tyrotoxin**

A toxin sometimes developed in cheese and milk by the action of bacilli.

**tyrotoxis**

Poisoning due to the presence of a toxin in milk, cheese, or other dairy products.

# U

## U function

See *convex function*.

## ubiquitous background levels

Concentrations of chemicals that are present in the environment due to anthropogenic sources (e.g., industry, automobiles).

## UCC

See *ultraclean coal*. See also *Uniform Commercial Code*.

## UEL

Upper explosive limit. See *upper flammability limit*.

## UFL

See *upper flammability limit*.

## UHF

See *ultrahigh frequency*.

## UIDS

See *user interface development system*.

## UIMS

See *user interface management system*.

## UL

See *Underwriters Laboratories, Inc.*

## ulcer

A defect, on the body surface or the lining of a mucous surface, produced by sloughing of necrotic inflammatory tissue. As commonly used, the term often refers to a peptic ulcer of the inner wall, or lining, of the stomach (gastric ulcer) or of the duodenum (duodenal ulcer).

## ullage

(1) The depth of the free space in a cargo tank above the liquid level. (2) See *outage*.

## ulna

The medial bone in the forearm, on the side opposite the thumb. It articulates with the humerus and with the head of the radius and its proximal end; with the radius and bones of the carpus at the distal end.

## ulnar deviation

A movement or position of the longitudinal axis of the hand toward the ulnar/little finger side of the forearm.

## ulnar nerve

A spinal nerve innervating generally the medial part of the forearm and hand.

## ULPA filter

See *ultra low penetration air filter*.

## ultimate BOD (BOD<sub>u</sub>)

The amount of oxygen required to completely satisfy the carbonaceous and nitrogenous biological oxygen demand. See also *biological oxygen demand*.

## ultimate factor of safety

That number by which the load limit is multiplied to yield the ultimate load.

## ultimate issue

That question which must finally be answered as, for example, the defendant's negligence is the ultimate issue in a personal injury action.

## ultimate load

The product of the limit load and the design ultimate load factor. It is the load that the structure must withstand without rupture or collapse in the expected operating environment.

## ultimate pressure factor

See *burst factor*.

## ultimate strength

The stress at which a material exhibits failure.

## ultracentrifugation

Subjection of material to centrifugal force 200,000 to 400,000 times the force of gravity.

## ultraclean coal (UCC)

Coal that has been washed, ground into fine particles, then chemically treated to remove sulfur, ash, silicone, and other substances. Usually in briquette form and coated with a sealant made from coal.

## ultradian

Pertaining to periods of less than 24 hours.

## ultradian rhythm

A biological rhythm having more than one cycle per day, or a period less than a day in length.

## ultrahigh frequency (UHF)

That portion of the electromagnetic spectrum consisting of radiation frequencies between 300 MHz and 3 GHz.

**ultralow emission vehicle**

A lean fuel vehicle meeting the more stringent ultralow emission standards.

**ultralow penetration air filter**

A filter with a collection efficiency of 99.99995%.

**ultrasonic**

High frequency sound waves that are beyond the range of human hearing, which is generally considered to be 20,000 Hertz. *See also ultrasound.*

**ultrasonic noise**

Noise characterized by frequency greater than audible noise, typically greater than 20,000 Hz. Also called *ultrasonic sound*.

**ultrasonics**

The use or study of ultrasonic sound energy.

**ultrasonography**

The use of pulsed ultrasound and echo recording for diagnostic purpose in the human body or elsewhere.

**ultrasound**

That acoustic energy with frequencies higher than those the human ear can normally hear, above about 20 kHz.

**ultraviolet (UV) rays**

Radiation from the sun or other sources that can be useful or potentially harmful. UV rays from one part of the spectrum enhance life and are useful in some medical and dental procedures. UV rays from other parts of the spectrum to which humans are exposed can cause skin cancer or other tissue damage. The ozone layer in the atmosphere provides a protective shield that limits the amount of ultraviolet rays that reach the Earth's surface.

**ultraviolet A (UV-A)**

That portion of the ultraviolet spectrum between about 315 nm and 400 nm. Also called *near ultraviolet*.

**ultraviolet B (UV-B)**

That portion of the ultraviolet spectrum between about 280 and 315 nm. Also called *actinic ultraviolet*.

**ultraviolet C (UV-C)**

That portion of the ultraviolet spectrum between about 100 and 280 nm. Also called *far ultraviolet*.

**ultrawide band radar**

A radar system emitting a broad range of frequencies, from megahertz to gigahertz.

**umbilicus**

The residual scar on the inferior, anterior abdomen from the removal of the umbilical cord. Commonly referred to as *navel*.

**umbilicus height**

*See omphalion height.*

**umbra**

The small central core of the greatest ionization within an ionization track of tissue or other material.

**UMTRCA**

Uranium Mill Tailings Radiation Control Act of 1978.

**unauthorized use**

The criminal offense of using a motor vehicle without the authority of the owner with full knowledge that such use is without his/her permission. It differs from larceny to the extent that in the crime of unauthorized use, the government need not prove the intent to deprive permanently the owner of the vehicle.

**unavoidable accident**

A legal term. An inevitable accident; one which could not have been prevented by exercise of due care by both parties under circumstance prevailing. Not necessarily an accident which was physically impossible, in the nature of things for the person to have prevented, but one not occasioned in any degree either remotely or directly by the want of such care or skill as the law holds every person bound to exercise. Such type of accident is present when an event occurs which was not proximately caused by the negligence of any party to the event.

**unavoidable casualty**

An event or accident which human prudence, foresight, and sagacity cannot prevent; a happening against will and without negligence.

**unavoidable cause**

A cause which reasonably prudent and careful persons under like circumstances do not and would not ordinarily anticipate, and whose effects, under similar circumstances, they do not and would not ordinarily avoid.



**unavoidable dangers**

*Maritime Insurance.* This term in a marine policy covering unavoidable dangers of the river includes those unpreventable by persons operating the vessel, and, like the term *perils of the sea*, includes all kinds of marine casualties (even accidents in which there is human intervention).

**unavoidable delay**

Any delay in an ongoing process or operation which is beyond the control or responsibility of a worker.

**unavoidable delay allowance**

*See delay allowance.*

**unburden**

To ease the human physical or mental workload through automation, computerization, mechanization, or some other means.

**unconscious**

(1) Not aware of surrounding environment. Not responding to sensory stimulation. (2) The area or activity of the mind in which primitive or unacceptable ideas and impulses are concealed from awareness by the psychic censor.

**unconsciousness**

An abnormal state of lack of response to sensory stimuli, resulting from injury, illness, shock, or some other bodily disorder. A brief loss of consciousness from which the person recovers spontaneously or with slight aid is called *fainting*. Deep, prolonged unconsciousness is known as *coma*.

**undependability**

That measurement error due to physiological variation over time. *See also unreliability.*

**under construction road**

Road construction has begun but is not completed.

**under construction runway**

Runway construction has begun but is not completed.

**under the influence of intoxicating liquor (or drugs)**

(1) Phrase used in statutes or ordinances prohibiting the operation of a motor vehicle by a party under the influence of intoxicating liquor or drugs covers not only all well-known and easily recognized conditions and degrees

of intoxication, but any abnormal mental or physical conditions which are the result of indulging to any degree in intoxicating liquors or drugs, and which tend to deprive one of that clearness of intellect and control of himself/herself which he/she would otherwise possess. (2) Any condition where intoxicating liquor or drugs have so greatly affected the nervous system, brain, or muscles of the driver as to impair, to an appreciable degree, his/her ability to operate a motor vehicle in the manner that an ordinary, prudent, and cautious person, in full possession of all faculties, using reasonable care, would operate or drive under like conditions. (3) A condition that makes a person less able, either mentally or physically, or both, to exercise clear judgement, and with steady hands and nerves, to operate an automobile with safety to himself/herself and to the public.

**undercurrent (or underflow) of surface stream**

Those waters which slowly find their way through the sand and gravel constituting the bed of a stream, or lands under or immediately adjacent to the stream, and are themselves part of a surface stream.

**undergarment**

A single piece of underwear.

**underground injection**

The placement of fluids underground through a bored, drilled, or driven well.

**underground sources of drinking water**

Aquifers that are currently being used as a source of drinking water and those that are capable of supplying a public water system.

**underground storage tank (UST)**

A tank located all or partially under ground that is designed to hold gasoline or other petroleum products or chemical solutions.

**underline**

A highlighting technique in which one or more straight lines are drawn below a line or character of text.

**underneath the point**

Directly below and downstream from the point of land.

**underpass**

The grade separation where part or all of one feature instance is directly above part or all of another feature instance.

**underwear**

That minimal clothing worn adjacent to the body and which one does not normally wear exposed when in public. Usually referring to pants and bra for women, shorts and t-shirt for men.

**Underwriters Laboratories, Inc. (UL)**

An independent, nonprofit organization that operates laboratories for examining and testing systems, devices, and materials of interest to the public safety.

**undeveloped event**

As pertains to fault tree analysis (FTA) and/or the management oversight and risk tree (MORT), an identified fault event that will not be developed further because its occurrence has been determined insignificant with regard to its effect on the top event, or because insufficient data exist to further evaluate the event, or because the event is too complex for the purpose of a specific evaluation. Represented graphically by a diamond shape.

**undisputed fact**

An admitted fact, which the court has not deemed sufficiently material to add to the finding, or has inadvertently omitted from it.

**undisturbed performance**

As pertains to radiation protection programs, the predicted behavior of a disposal system, including consideration of the uncertainties in predicted behavior, if the disposal system is not disrupted by human intrusion or the occurrence of unlikely natural events.

**undo**

To re-establish the condition on a display prior to the execution of the last command. Many software products allow users to "undo" several generations of commands.

**undredged shipping lane**

Lane has not been dug out.

**undue influence**

Persuasion, pressure, or influence short of actual force, but stronger than mere advice, that so overpowers the dominated party's free will or judgement that he or she cannot act intelligently and voluntarily, but acts, instead, subject to the will or purposes of the dominating party.

**undulant fever**

Brucellosis. A persistent and recurring fever caused by a bacteria that is transmitted to man as a result of contact with infected animals, or consuming infected meat or milk. *See also brucellosis.*

**unemployment insurance**

A form of taxation collected from businesses to fund unemployment payments and benefits.

**unfair labor practice**

Within the National Labor Relations Act, it is an unfair labor practice for an employer: A) To interfere with, restrain, or coerce employees in the exercise of their rights to self-organization, to form, join, or assist labor organizations, to bargain collectively through representatives of their own choosing, and to engage in concerted activities, for the purpose of collective bargaining or other mutual aid or protection. B) To dominate or interfere with the formation or administration of any labor organization or contribute financial or other support to it. C) By discrimination in regard to hire or tenure of employment or any term or condition of employment to encourage or discourage membership in any labor organization. D) To discharge or otherwise discriminate against an employee because he/she has filed charges or given testimony under the Act. E) To refuse to bargain collectively with the representatives of his/her employees. The following "acts" have been held to be unfair labor practices under the National Labor Relations Act:

- 1). Failure to re-employ striking employees.
- 2). Refusal of employer to reinstate union members who were evicted from the plant unless members would withdraw from the union.
- 3). Refusal of the employer to bargain collectively in good faith.
- 4). Threats by the employer to close if a union gains a foothold in their plant.
- 5). Anti-union statements made by the employer's supervisory employees during and after a strike.
- 6). Refusal of employer to permit the posting of a notice that the employer would not discriminate against employees who wish to join the union.

7). Discharge of an employee because of membership in or activity on behalf of a labor organization.

8). Refusal of employer who had refused to bargain with a union which had been certified as the exclusive bargaining agent.

9). Assault by persons employed by a manufacturer upon union organizers or sympathizers.

10). Discharge of an employee because he/she would not become a member of a union in accordance with a closed shop agreement.

**unfinished oil**

Includes all oils requiring further processing, except those requiring only mechanical blending. In most cases, these are produced by partial refining or purchased in an unfinished state for conversion to finished products by further refining.

**unfit**

Unsuitable; incompetent; not adapted or qualified for a particular use or service.

**Uniform Commercial Codes (UCC)**

One of the Uniform Laws drafted by the National Conference of Commissioners on Uniform State Laws and the American Law Institute governing commercial transactions (including sales and leasing of goods, transfer of funds, commercial paper, bank deposits and collections, letters of credit, bulk transfers, warehouse receipts, bills of lading, investment securities, and secured transactions). The UCC has been adopted in whole or substantially by all states.

**uniform resource locator (URL)**

An Internet address for web pages.

**unilateral**

Pertaining to only one side of a body or structure.

**unilateral teleoperator**

A type of teleoperator system capable only of one-way force and motion transmission (from the operator to the teleoperator).

**unintentional introduction of a species**

Under the Federal Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990: An introduction of nonindigenous species that occurs as the result of activities other than the purposeful or intentional introduction of the species involved.

**uninterruptible power supply (UPS)**

A device that provides surge protection and short-term backup power supply for computers (or other systems).

**uniocular**

See *monocular*.

**union**

(1) *General*. A coming together. (2) *Labor*. An organization of workers, formed for the purpose of negotiating with employers on matters of wages, seniority, working conditions, fringe benefits, and the like. (3) *Medical*. The growing together of tissues separated by injury, as the ends of a fractured bone, or the edges of an incision.

**union certification**

The process by which an official governmental body such as the National Labor Relations Board declares that a particular union has qualified as the bargaining representative of the employees of a company or industry by reason of a majority vote of the workers.

**union contract**

A written agreement between the union and employer covering such matters as wages, seniority rights, and working conditions.

**Union of Soviet Socialist Republics (U.S.S.R.)**

Consisted of 15 constituent republics: Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Kyrgystan, Latvia, Lithuania, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan. As a political entity, the U.S.S.R. ceased to exist as of December 31, 1991.

**union rate**

The wage scale set by a union as a minimum wage to be paid and generally expressed as an hourly rate or piece-work rate.

**unit**

Under the Clean Air Act: A fossil fuel-fired combustion device.

**unit load**

Packages loaded on a pallet, in a crate, or any other way that enables them to be handled at one time as a unit.

**unit load device**

Any type of freight container, aircraft container, aircraft pallet with a net, or aircraft pallet with a net over an igloo.

**unit strain**

The change in length due to stress divided by working length.

**unit tow**

An integrated tow consisting of bow, center, and stem sections. Found generally in the liquid cargo trade.

**unit train**

A train of a specified number of railcars, perhaps 100, which remain as a unit for a designated destination or until a change in routing is made.

**United Nations**

An organization started by the Allied Powers in World War II for the stated purposes of preventing war, providing justice, and promoting welfare and human rights of peoples. Its membership is made up of nearly all nations of the world. New members may be admitted by a two-thirds vote of the General Assembly. It consists of a Security Council and a General Assembly and subordinate agencies.

**United States air carrier**

A citizen of the United States who undertakes directly by lease, or other arrangement, to engage in air transportation.

**United States Attorney**

A chief prosecutor for the federal government (and defense counsel in civil matters) for one of the regions into which the Justice Department and the Federal Judiciary are organized.

**United States Coast Guard (USCG)**

Established by act of January 28, 1915 (14 U.S.C. 1), became a component of the Department of Transportation on April 1, 1967, pursuant to the Department of Transportation Act of October 15, 1966 (49 U.S.C. app. 1651 note). The Coast Guard is a branch of the Armed Forces of the United States at all times and is a service within the Department of Transportation except when operating as part of the Navy in time of war or when the President directs. The predecessor of the Coast Guard, the Revenue Marine was established in 1790 as a federal maritime law enforcement agency. Other responsibilities include search and rescue, maritime law enforcement, marine inspection, marine licensing, Great Lakes pilotage, marine environmental response, port safety and security, waterways management,

aids to navigation, bridge administration, ice operations, deepwater ports, boating safety, Coast Guard auxiliary, military readiness, reserve training, and Marine Safety Council.

**United States Code**

Contains a consolidation and codification of all general and permanent laws of the U.S. Prior to 1926, the positive law for federal legislation was contained in the one volume of the Revised Statutes of 1875 and then in each subsequent volume of the Statutes at Large. In 1925, Congress authorized the preparation of the United States Code. This was prepared by a Reviser of Statutes appointed by Congress, who extracted all sections of the Revised Statutes of 1875 that had not been repealed and then all of the public and general laws for the Statutes at Large since 1873 that were still in force. These were then rearranged into fifty titles and published as the United States Code (1926 edition) in four volumes. Each year thereafter a cumulative supplement containing the laws passed since 1926 was published. In 1932, a new edition was issued which incorporated the cumulated supplements to the 1926 edition, and this became the United States Code (1932 edition). Every six years a new edition of the U.S. Code is published with cumulative supplement volumes being issued during the intervening years.

**United States Federal Sentencing Commission**

Seven commissioners organized in 1985 and supported by a core staff of attorneys, researchers, and administrative personnel. The Commission's purpose is to gather information to develop more fairness and certainty, and generally promote more effectiveness, in the federal sentencing system under the Sentencing Reform Act. Guidelines have been developed for both individual as well as organizational defendants. *See also Federal Sentencing Guidelines.*

**United States Flag Carrier (or American Flag Carrier)**

One of a class of air carriers holding a Certificate of Public Convenience and Necessity issued by the DOT, approved by the President, authorizing scheduled operations over specified routes between the United States (and/or its territories) and one or more foreign countries.

**United States Territories**

Include American Samoa, Guam, the Northern Marianas, and the Virgin Islands.

**United States Travel and Tourism Administration (USTTA)**

An agency in the Commerce Department; its principal mission is to implement broad tourism policy initiatives for the development of international travel to the U.S. as a stimulus for economic stability.

**universal precautions**

An approach to infection control which is based upon the premise that all human blood and certain human body fluids are to be treated as if known to be infectious for HIV, HBV, and/or other bloodborne pathogens (whether or not actual infection is indeed the case).



*The use of latex gloves is a major element in the practice of universal precautions*

**universal serial bus (USB)**

*Computing.* A high-speed serial port technology that allows a variety of input and output devices to be easily attached to a personal computer (PC). A USB device can be plugged in or unplugged without having to turn off the PC, and is automatically recognized and configured upon plug in.

**unladen inland waterways traffic**

Any movement of an Inland Waterways Transport (IWT) freight vessel for which the gross weight of goods carried, including that of equipment such as containers, swap-bodies, and pallets, is nil, as well as any movement of an IWT passenger vessel without passengers.

**unlatch**

To release lock on fifth wheel to drop trailer.

**unleaded gasoline**

Contains not more than 0.05 gram of lead per gallon and not more than 0.005 gram of phosphorus per gallon. Premium, regular, and intermediate grades are included, depending on the octane rating. *See also gasoline.*

**unlinked passenger trips**

The number of passengers who board public transportation vehicles. A passenger is counted each time he/she boards a vehicle even though he/she may be on the same journey from origin to destination.

**unliquidated damages**

Damages that are not yet reduced to a certainty with respect to amount, nothing more being established than the plaintiff's right to recover; or such as cannot be fixed by a mere mathematical calculation from ascertained data in the case.

**unloaded vehicle weight**

The weight of a vehicle with maximum capacity of all fluids necessary for operation of the vehicle, but without cargo, occupants, or accessories that are ordinarily removed from the vehicle when they are not in use.

**unlooked for mishap**

One occurring unexpectedly and not naturally or in the ordinary course of events.

**unnecessary cost**

Any cost in money, time, materials, energy, or other asset which does not contribute to the quality, usefulness, life, appearance, or features of a product.

**unoccupied time**

That time which may result from a worker doing neither internal work nor taking a rest allowance due to machine-controlled time or a team effort in which his/her immediate participation is not required.

**unoccupied time allowance**

That allowance made for unoccupied time.

**unpaved road surface**

Gravel/soil and unimproved roads and streets (Surface/Pavement Type Codes 20, 30 and 40).

**unprogrammed inspections**

Those OSHA inspections performed in response to particular events that occur during the inspection year, such as catastrophes, fatal accidents, and employee complaints.

**unrestricted area**

*Ionizing Radiation.* An area in which the radiation dose to a person would be less than 2 millirem in any 1 hour or 100 millirem per week.

**unrestricted work**

See *self-paced work*.

**unsafe act**

(1) Any act or action, either planned or unplanned, which has the potential to result in an undesired outcome or loss (injury, property damage, lost production time, etc.). (2) Conduct that causes an unnecessary exposure to a hazard or a violation of a commonly accepted procedure which directly permitted or resulted in a near miss or the occurrence of an accident.

**unsafe condition**

(1) Any existing or possible condition which, if allowed to continue, could result in an undesired outcome or loss (injury, property damage, lost production time, etc.). (2) Any physical state that deviates from the accepted, normal, or correct practice and that has the potential to produce injury, excessive exposure to a health hazard, or property damage.

**unsatisfactory condition classification**

Facility is not operational and is not serving the purpose for which it was constructed.

**unsaturated**

(1) Not having all affinities of its elements satisfied (unsaturated compound). (2) Not holding all of a solute which can be held in solution by the solvent (unsaturated solution).

**unsaturated zone**

The area above the water table where the soil pores are not fully saturated, although some water may be present.

**unscheduled maintenance**

See *corrective maintenance*.

**unscheduled repair**

Maintenance requiring the emergency repair of a piece of equipment as distinguished from those repairs performed during a scheduled cycle.

**unstable**

*Ionizing Radiation.* All radioactive elements are unstable since they emit particles and decay to form other elements.

**unstable air**

See *absolutely unstable air*.

**unstable material**

A chemical substance that will vigorously polymerize, decompose, condense, or become self-reactive upon exposure to air, water, shock, pressure, or temperature fluctuation.

**unstable wave**

See *frontal wave*.

**unvoiced sound**

A sound produced by air turbulence under pressure at a constriction point in the vocal tract.

**up-and-down methodology**

See *staircase procedure*.

**up-and-down rod**

*Rail Operations.* A rod used for connecting the semaphore arm to the operating mechanism of a signal.

**up the hill**

Anything away from the towboat and on shore. When a river man has "gone up the hill," he has gone ashore, whether it be in a city or on a mountainside or across a prairie.

**upper arm circumference**

The surface distance around the upper arm at level of the midpoint between the lateral projection of acromiale and the inferior aspect of the olecranon process of the ulna. Measured with the individual standing erect and the upper arms hanging naturally at the sides with the elbow flexed 90°.

**upper arm circumference, recumbent**

The upper arm circumference in a reclining position. Measured with the arm lying beside the body and the elbow raised slightly by a small pillow or other pad.

**upper coupler assembly**

A structure consisting of an upper coupler plate, king-pin, and supporting framework which interfaces with and couples to a fifth wheel.

**upper coupler plate**

A plate structure through which the king-pin neck and collar extend. The bottom surface of the plate contacts the fifth wheel when coupled.



**upper explosive limit (UEL)**

See *upper flammability limit (UFL)*.

**upper extremity**

The hand, wrist, and arm, with its junction to the shoulder.

**upper flammability limit (UFL)**

The concentration of a substance in air, usually expressed as a volume percent, above which combustion cannot be supported at normal room temperature because the mixture of air and fuel is too "rich" (i.e., too much fuel) and therefore, has insufficient oxygen. Combustion in air of a flammable material can occur only at concentrations between the lower and upper flammability limits. This area is referred to as the *flammability range*.

**upper gauge**

A water level gauge located at the upper end of the lock.

**upper-half of saddle-mount**

That part of the device which is securely attached to the towed vehicle and maintains a fixed position relative thereto, but does not include the *king-pin*. See also *king-pin saddle-mount*, *lower-half of saddle-mount*, and *saddle-mount*.

**upper respiratory tract**

The mouth, nose, sinuses, and throat.

**upper threshold**

The maximum stimulus intensity which will produce a specific type of sensory experience or elicit a specific response. Also called *terminal threshold*.

**UPS**

See *uninterruptable power supply*.

**upset**

The unanticipated malfunction of a process operation.

**upslope fog**

Fog formed as moist, stable air flows upward over a topographic barrier.

**uptime**

The period of time during which a system element is either performing or capable of performing.

**upwelling**

The rising water (usually cold) toward the surface from the deeper regions of a body of water.

**uranium**

A radioactive heavy metal element used in nuclear reactors and the production of nuclear weapons. Term refers usually to U238, the most abundant radium isotope, although a small percentage of naturally occurring uranium is U235.

**uranium byproduct material**

The tailings or wastes produced by the extraction or concentration of uranium from any ore processed primarily for its source material content. Ore bodies depleted by uranium solution extraction operations and which remain underground do not constitute "byproduct material."

**uranium series**

Isotopes which belong to a chain of successive decays which begins with uranium-238 and ends with lead-206.

**urban**

Usually refers to areas with a population of 5,000 or greater.

**urban area**

Any area that includes a municipality or other built-up place which is appropriate, in the judgement of the Secretary of Transportation, for a public transportation system to serve commuters or others in the locality taking into consideration the local patterns and trends of urban growth.

**urban arterial routes**

Those public roads that are functionally classified as a part of the urban principal arterial system or the urban minor arterial system as described in volume 20, appendix 12, Highway Planning Program Manual.

**urban collector routes**

Those public roads that are functionally classified as a part of the urban collector system as described in volume 20, appendix 12, Highway Planning Program Manual.

**urban ferryboat**

A boat providing fixed-route service across a body of water with one or more terminals within an urbanized area, excluding international and urban park ferries.

**urban heat island**

The increased air temperatures in urban areas as contrasted to the cooler surrounding rural areas.

**urban highway**

Any highway, road, or street within the boundaries of an urban area. An urban area is an area including and adjacent to a municipality or urban place with 5,000 or more population. The boundaries of urban areas are fixed by the states, subject to the approval of the Federal Highway Administration, for purposes of the Federal-Aid highway program.

**urban inland waterways transport**

A transport carried out on inland waterways located within the boundaries of a built-up area.

**urban place**

A U.S. Bureau of Census-designated area consisting of incorporated political units or closely settled unincorporated areas outside an urbanized area.

**urban runoff**

Stormwater from city streets and adjacent domestic or commercial properties that may carry pollutants of various kinds into the sewer systems and/or receiving waters.

**urbanized area**

(1) Areas with a population of 50,000 or more, at a minimum, that encompass an entire urbanized area in a state, as designated by the U.S. Bureau of the Census. The Federal Highway Administration (FHWA) approved, adjusted urbanized area boundaries include the census-defined urbanized areas plus transportation centers, shopping centers, major places of employment, satellite communities, and other major trip generators near the edge of the urbanized area, including those expected to be in place shortly. (2) An approximate classification of sample households as belonging to an urbanized area or not. Those classified as belonging to an urbanized area were either in a central city of a Metropolitan Statistical Area (MSA), or in a MSA but outside the central city, and within a zip code area with a population density of at least 500 people per square mile in 1990.

**Urbanized Area Formula Program Funds**

Financial assistance from the Urbanized Area Formula Program (formerly Section 9). This program governs the distribution of the public

transit capital and operating block grant appropriations by urbanized area. For this program, it is the Federal capital assistance granted to public transit agency providers to designated recipients on behalf of transit providers.

**urea**

A white, crystalline substance, the diamide of carbonic acid. It is one of the chief nitrogenous constituents of urine and is the chief end product of protein metabolism, being the form under which the nitrogen from the body is given off. The amount of urea in the urine increases with the quantity of protein in the diet. This is because urea is an endogenous and exogenous waste product: endogenous because some of it is derived from the breakdown of body protein as the tissues undergo disintegration and repair, and exogenous because some of it is derived from the amino acids absorbed from the intestinal tract but not utilized by the body. In severe nephritis or other disorders leading to renal failure, the concentration of urea in the blood may be greatly increased, as revealed by measurement of the blood urea nitrogen (BUN).

**uremia**

Accumulation in the blood of substances ordinarily eliminated in the urine. The condition develops when the kidneys lose most of their ability to filter out waste products from the blood, because of damage by disease or by severe trauma. It may be the result of a temporary poisoning or obstruction of the kidneys, or it may occur in the final stage of a severe kidney disease. The first and most important symptom of *acute uremia* is always a sudden drop in the volume of urine. In severe cases, the production of urine may stop entirely. For the first several days, there may be few symptoms, and in general, no feelings of discomfort. Soon, however, loss of appetite, headache, nausea, and vomiting appear. In severe cases, the breath has an ammonia-like odor of urine. There may be drowsiness, and perhaps convulsions. *Chronic uremia* may result from chronic nephritis or an advanced, chronic stage of pyelitis, or it may be caused by hypertensive kidney disease. Many other disorders such as diabetes mellitus, collagen diseases, polycystic kidneys, and untreated enlargement of the prostate, kidney stones,

and other obstructions in the urinary system may cause uremia. The symptoms of chronic uremia, unlike those of acute uremia, usually make their appearance gradually. Instead of a sudden decrease in the volume of urine, it is undiminished or may even be increased. But as the kidneys continue to fail, the person becomes greatly fatigued. Anemia develops and the blood pressure may increase. The vision often becomes dim. Nausea, vomiting, and diarrhea occur. The skin is pallid and appears waxy. Frequently there may be periods of hiccuping. The breath and sweat smell of urine; urea frost (a layer of urea crystals) may appear on the face and chest. The patient becomes increasingly drowsy. Finally, he/she lapses into a coma from which he/she does not awaken.

**urethra**

The tubular structure which extends from the bladder to the body surface for excretion of urine.

**urinal**

A receptacle into which urine may be directed and which is normally connected to appropriate plumbing.

**urinate**

To eliminate urine from the body via the urethra.

**urine**

The liquid excretion from the kidneys (normally containing various salts, urea, bodily metabolites, and some solids) which is passed to the exterior through the bladder and urethra. In addition to waste materials, urine also contains surpluses of products that are necessary for bodily functioning. The kidneys remove not only excess water, but also excess sodium chloride and other chemicals. Thus, in the typical specimen of urine there will be sodium, potassium, calcium, magnesium, chloride, phosphate, and sulfate.

**URL**

See *uniform resource locator*.

**URT**

Upper respiratory tract.

**urticaria**

A vascular reaction of the skin marked by transient appearance of slightly elevated patches that are redder or paler than the sur-

rounding skin and often attended by severe itching. It may result from various causes (e.g., allergens, exercise, excitement). Also called, more commonly, *hives*.

**urobilinogen**

A colorless compound formed in the intestines by the reduction of bilirubin. Normally about 1 percent of the bilirubin produced in the body by the breakdown of hemoglobin is excreted in the urine as urobilinogen. Increased amounts of urobilinogen in the urine indicate an excessive amount of bilirubin in the blood. Determination of the amount of urobilinogen excreted in a given period makes it possible to evaluate certain types of hemolytic anemia and also is of help diagnosing liver dysfunction.

**urology**

The branch of medicine dealing with the urinary system in the female and the genitourinary system in the male.

**usability**

A measure of the ease with which one may use a product or learn how to use a new product.

**USB**

See *universal serial bus*.

**USCG**

See *United States Coast Guard*.

**USDA**

United States Department of Agriculture.

**use**

The implementation of some device's intended function under the control of one or both hands.

**used oil**

According to the Federal Solid Waste Disposal Act: Any oil which has been a) refined from crude oil, b) used, and c) as a result of such use, contaminated by physical or chemical impurities.

**useful life**

That period of time in the existence of a machine or system following any run-in phase and prior to the wear-out phase in which it is generally functionally stable in its operation. See also *life cycle characteristic curve*.

**useful thermal output**

The thermal energy made available for use in any industrial or commercial process or used

in any heating or cooling application, i.e., total thermal energy made available for processes and applications other than electrical generation.

**user charge**

(1) A fee charged to users for goods and services provided by the federal, state, and local governments. User charges, either directly or indirectly, are paid on a periodic or occasional basis with license fees and excises. User charges are also paid at the time infrastructure services are consumed with the payment of fuel taxes and tolls. (2) A charge or fee for use of an improved waterway. Possible types of charges include fuel taxes, lockage fees, segment tolls, and licensing of floating equipment.

**user-computer interaction**

See *human-computer interaction*.

**user-computer interface**

See *human-computer interface*.

**user-friendly**

Designed according to human factors/ergonomic principles with claimed or demonstrated ease of use.

**user guidance**

Any prompt or feedback which assists the user in performing a computerized task.

**user interface development system (UIDS)**

Any set of software tools which may be used for developing user interfaces.

**user interface management system (UIMS)**

Any set of software tools which may be used for managing the user interface.

**user-preferred trajectory**

The route, altitude profile, speed, and times of departure and arrival that the user prefers.

**user response time**

The period required for or taken by a user to enter a command or reply to a display prompt.

**USPHS**

United States Public Health Service.

**U.S.S.R.**

See *Union of Soviet Socialist Republics*.

**UST**

See *underground storage tank*.

**USTTA**

See *United States Travel and Tourism Administration*.

**uterus**

A hollow muscular organ in the female pelvis. It holds and nourishes the growing fetus. The uterus, or womb, is normally about the size and shape of a pear. The upper part, or fundus, is broad and flattened; the middle portion is the body, or corpus; the lower part, or cervix, is narrow and tubular. The cervix opens downward into the vagina.

**utility aircraft**

An aircraft designed for general purpose flying.

**utility airport**

An airport designed, constructed, and maintained to serve airplanes in Aircraft Approach Categories A and B.

**utility employee**

A railroad employee assigned to and functioning as a temporary member of a train or yard crew whose primary function is to assist the train or yard crew in the assembly, disassembly or classification of rail cars, or operation of trains (subject to the conditions set forth in 49 CFR 218.22).

**utilization equipment**

Equipment which utilizes electric energy for mechanical, chemical, heating, lighting, or similar useful purpose.

**utilization system**

A system which provides electric power and light for employee workplaces, and includes the premise's wiring system and utilization equipment.

**utmost care**

See *great care and care*.

**utricle**

An expanded region in the membranous labyrinth of the vestibular apparatus which contains endolymph and utricular macula.

**utricle macula**

The mechanoreceptor of the utricle, composed of sensory hair cells and a gelatinous mass with embedded otoliths.

**UV**

See *ultra-violet rays*.

**UV detector**

A detection system in which ultraviolet radiation is passed through a cell containing a sampled material. The absorption of ultraviolet energy at a wavelength which coincides with the absorption band of the analyte (contaminant) is proportional to the amount of contaminant in the sample. This can be used to determine the concentration of the contaminant.

**UVA**

Long-wave ultraviolet radiation.

**UVB**

Short-wave ultraviolet radiation.

**UVS**

Ultraviolet spectrophotometry.

**uvula**

A muscular tissue descending from the midline of the soft palate.

# V

## v

Velocity.

## V

Volt.

### **vacation**

An employee benefit in which a given number of days off from work per year are provided with pay for the employee. There may be certain restrictions as to when the time off may be taken.

### **vacation of judgement**

The setting aside of a judgement on the grounds that it was issued by mistake, inadvertence, surprise, excusable neglect, or fraud.

### **vaccination**

Inoculation with weakened or dead microorganisms to develop immunity to a specific disease. The term "vaccination" comes from the Latin *vacca*, or cow, and was coined when the first inoculations were given with organisms that caused the mild disease cowpox to produce immunity against smallpox. Today, the word has the same meaning as inoculation and immunization.

### **vaccine**

A preparation containing killed or living whole or parts of microorganisms with antigenic properties that are used to induce specific immunity in the recipient against an infectious agent.

### **vacuum**

A condition in which air pressure approaches zero.

### **vacuum assist power brakes**

Standard type hydraulic brakes with a pressure assist cylinder having a vacuum chamber which when atmospheric pressure is allowed to one side of the piston or diaphragm, drives a plunger in the hydraulic system thereby increasing the effect of pedal pressure.

### **vagina**

A tubular structure associated with the female genitalia and located between the bladder and rectum.

### **vagueness doctrine**

Under this principle, a law (e.g., a criminal statute) which does not fairly inform a person of what is commanded or prohibited is unconstitutional as violative of due process. The doctrine originates in the due process clauses of the Fourteenth Amendment, and is the basis for striking down legislation which contains insufficient warning of what conduct is unlawful.

### **vagus nerve**

The tenth cranial nerve, having a wide distribution and having motor functions including speech production and swallowing, with sensory functions including pressure/touch in the pharyngeal region, abdominal distention, and nausea.

### **Valdez Principles**

Environmental principles named after the Exxon Valdez tanker that ran aground on March 24, 1989, spilling eleven million gallons of crude oil into Alaska's Prince William Sound. These principles developed into the Coalition for Environmentally Responsible Economies (CERES). *See also Coalition for Environmentally Responsible Economies (CERES).*

### **valence**

A whole number representing or denoting the chemical combining power of one element with another. It is the number of electrons that can be lost, gained, or shared by an atom when combining with another element.

### **valid**

Having legal strength or force, executed with proper formalities, incapable of being rightfully overthrown or set aside.

### **validate**

To demonstrate that a test, standard, or other device has validity.

### **validated method**

A sampling/analytical method that has been evaluated and determined to be effective for assessing worker's exposure to a contaminant. A method should have an efficiency of 75% at the 95% confidence level to be considered acceptable.

### **validity**

The degree to which a test or other measurement device really measures what it was designed to measure.



**valley breeze**

See *mountain and valley breeze*.

**valley fog**

See *radiation fog*.

**valsalva maneuver**

A procedure in which the nostrils are pinched off, the mouth kept closed, and pressure voluntarily increased in the nasopharyngeal region to aid in equalizing pressures within the nasopharynx and middle ear.

**value**

(1) The estimated, appraised, or actual market worth of a product or service. (2) The ratio of the cumulative benefits of an item to the cumulative costs of that item. (3) The numerical magnitude of some measurable quantity. (4) The utility of an object in satisfying, directly or indirectly, the needs or desires of human beings. (5) See *Munsell value*.

**value added**

That difference between the sales income from goods and the costs of materials, supplies, and any outside services used in their production and delivery.

**value adding time**

That portion of the time in the work sequence which increases a product's value by work performed on the product.

**value analysis**

A systematic study to determine costs in each production phase for manufacturing an item, either during the engineering phase of product development or on an already existing product. Generally with the intent to reduce costs by eliminating unnecessary steps.

**value engineering**

The application of engineering techniques toward providing a functional product or service at the lowest cost. Sometimes referred to as *value control*.

**value index**

A dimensionless number which represents the ratio of worth to cost.

**value of human capital**

The present economic worth of an individual's expected future earnings from a given age due to employment.

**value of property assisted**

Monetary value of the distressed unit (including cargo) at the time assistance was rendered by the Coast Guard.

**value of property lost**

Monetary value of actual property lost as a result of the incident.

**value set**

Those social standards commonly accepted by an individual, group, or society.

**van**

A 20-foot long or shorter vehicle, usually with an automotive-type engine and limited seating normally entered directly through side or rear doors rather than from a central aisle, used for demand response, vanpool, and lightly patronized motorbus service. Includes large vans. Exceptions are a) Volkswagen vans are categorized as minivans, and b) all other pre-1983 vans are categorized as vans. Privately owned and/or operated vans and minivans designed to carry from 5 to 13 passengers or to haul cargo. See also *motor vehicle* and *vehicle*.

**van den Bergh test**

A laboratory test done to determine the concentration of bilirubin in the blood. Blood is obtained by finger prick or venipuncture. See *bilirubin*.

**van der Hoeve's syndrome**

A genetically determined condition characterized by blue scleras, deafness, and abnormal brittleness of bones.

**vandalism**

Such willful or malicious acts as are intended to damage or destroy property.

**vanning**

A term for stowing cargo in a container.

**vanpool**

(1) A voluntary commuter ride-sharing arrangement, using vans with a seating capacity greater than 7 persons (including the driver) or buses, which provides transportation to a group of individuals traveling directly from their homes to their regular places of work within the same geographical area, and in which the commuter/driver does not receive compensation beyond reimbursement for his or her costs of providing the service. (2) An arrangement in which a group of passengers

share the use and cost of a van in traveling to and from prearranged destinations together. (3) Vans and/or Class C motor buses operating as a voluntary commuter ride-sharing arrangement, which provides transportation to a group of individuals traveling directly between their homes and their regular places of work within the same geographical area. The vans should have a seating capacity greater than seven persons, including the driver. (4) Publicly sponsored commuter service operating under prearranged schedules for previously formed groups of riders in 8- to 18-seat vehicles. Drivers are also commuters who receive little or no compensation other than free transportation and use of the vehicle during off hours.

**van't Hoff's law**

The velocity of chemical reactions is increased twofold or more for each rise of 10°C in temperature.

**VAPEPS**

See *Vibroacoustic Payload Environment Prediction System*.

**vapor**

A term used for a substance that, although present in the gaseous phase, usually exists as a liquid or solid at room temperature and pressure.

**vapor barrier**

(1) *General*. Any material used to prevent moisture (primarily atmospheric moisture) from passing through or contacting a protected body or area. (2) *Wearing Apparel*. That material used to prevent or substantially inhibit the transfer of water, corrosive liquids, and steam or other hot vapors from the outside of a garment to the wearer's body.

**vapor-capture system**

Any combination of hoods and ventilation systems that captures or contains organic vapors in order that they may be directed to an abatement or recovery device.

**vapor dispersion**

The movement of vapor clouds in air due to wind, gravity spreading, and mixing.

**vapor/gas spiking**

Sampling air through a media to which an analyte of interest has been added. Subsequent desorption and analysis provides information

on sampling media effectiveness, analyte losses during sampling, sampling stability, and other factors. A recovery of greater than or equal to 75% should be realized for the method to be considered acceptable.

**vapor/hazard ratio**

The ratio of the equilibrium vapor concentration at 77°F (25°C) to the 8-hour time-weighted average TLV.

**vapor phase**

The existence of a substance in the gaseous state.

**vapor plumes**

Flue gases that are visible because they contain water droplets.

**vapor pressure**

The pressure exerted when a solid or liquid is in equilibrium with its own vapor. Usually expressed in millimeters of mercury or pounds per square inch, vapor pressure is a function of the substance and the temperature, and is often used as a measure of how rapidly a liquid will evaporate. Also called *actual vapor pressure*.

**vapor recovery**

A system or method by which vapors are retained and conserved.

**vapor spike**

A sorbent media sampling device to which a known amount of a substance, in the form of a vapor, has been added.

**vaporization**

(1) Conversion of a solid or liquid into a vapor without change in the chemical composition of the material involved. (2) An addition of thermal energy changing a liquid or semisolid to a vapor or gaseous state.

**vaporizer**

A heat transfer facility designed to introduce thermal energy in a controlled manner for changing a liquid or semisolid to a vapor or gaseous state.

**variability**

That quality which leads to obtaining different results under the same or different conditions. See also *dispersion*.

**variable**

An entity, often represented by a symbol, which is capable of having any value within a

specified set or range. May also be referred to as *factor*.

**variable air volume (VAV) system**

Air handling system that conditions the air to a constant temperature and varies the outside airflow to ensure thermal comfort.

**variable cost**

A manufacturing or service cost which changes with the quantity produced or the level of services.

**variable element**

A work element whose time for completion varies due to one or more changes in characteristics of the product or service, either across jobs or from one work cycle to another.

**variable error**

A deviation from an obtained value on replication of a psychophysical experiment due to random or unknowingly altered conditions between the measurements.

**variable operating cost**

In reference to passenger car operating cost, expenditures which are dependent on the amount of use of the car, such as the cost of gas and oil, tires, and other maintenance.

**variance**

(1) Government permission for a delay or exception in the application of a given law, ordinance, or regulation. (2) Permission to do an otherwise illegal act. In land use control, approval by a local board to relax the otherwise applicable zoning. Distinguished from a *special permit*. (3) A mathematical measure of the variation in the observed values of a sample population.

**variance ratio test**

See *F test*.

**varicose vein**

An enlarged vein, especially in the leg and visible as blue streaks beneath the skin, generally due to over-stretching by excessive venous pressure for an extended period of time, resulting in valve damage.

**varioid**

Infection by the virus of smallpox producing no or slight symptoms in a previously vaccinated person, which is capable of transmitting infection that may be fatal to a susceptible person.

**VASI**

See *airport visual approach slope indicator lighting*.

**vasoconstriction**

A decrease in the cross-sectional area of a blood vessel.

**vasodilatation**

An increase in the cross-sectional area of a blood vessel. Also referred to as *vasodilation*.

**vasomotor**

Pertaining to neural control of the arterial smooth muscles in regulating blood flow.

**VAT**

See *vinyl asbestos tile*.

**VAV**

See *variable air volume system*.

**VCP**

See *visual comfort probability*.

**VDT**

See *video display terminal*.

**VDU**

See *video display unit*.

**vector**

(1) *Biology*. An organism, often an insect or rodent, that carries disease. (2) *Medicine*. An object that is used to transport genes into a host cell (vectors can be plasma, viruses, or other bacteria). A gene is placed in a vector, the vector "infects" the bacterium. (3) *Medicine*. A carrier, usually an arthropod, that is capable of transmitting a pathogen from one organism to another. (4) *Mathematics*. A physical quantity that has a magnitude and direction in space, as velocity and acceleration. (5) A matrix composed of a single row or column; a column or row within a matrix.

**veering wind**

The wind that changes direction in a clockwise sense, north to northeast to east, and so on.

**veg**

A psychophysical scale for heaviness.

**vegan**

A vegetarian who excludes for his/her diet all protein of animal origin.

**vehicle**

(1) *Medical*. A transporting agent, especially the component of a medication (prescription)

serving as a solvent or to increase the bulk or decrease the concentration of the mixture. (2) *Transit*. As the term is applied to private entities, does not include a rail passenger car, railroad locomotive, railroad freight car, or railroad caboose, or other rail rolling stock described in Section 242 of Title III of the Federal Transit Act. (3) *Transit*. Motorized vehicles used by U.S. households for personal transportation. Excluded are motorcycles, mopeds, large trucks, and buses. Included are automobiles, station wagons, passenger vans, cargo vans, motor homes, pickup trucks, and jeeps or similar vehicles. To be included, vehicles must be a) owned by members of the household, or b) company cars not owned by household members but regularly available to household members for their personal use and ordinarily kept at home, or c) rented or leased for 1 month or more. *See also automobile, bus, car, minivan, moped, motorcycle, motor vehicle, semi, semitrailer, taxi, tractor trailer, tractor-semitrailer, truck, truck tractor, and van.*

#### **vehicle acquisition**

The number of vehicles a household acquires or obtains during the year. The average number of vehicles in the stock is computed using these data. *See also vehicle disposition.*

#### **vehicle class**

(1) A term that includes sedans, station wagons, ambulances, buses and trucks, or different categories of vehicles according to Federal Standards for fiscal year 1992. (2) The first three characters of the vehicle license number on a government vehicle. The first character will always be "G."

#### **vehicle configuration**

The combination of vehicular units comprising a commercial motor vehicle.

#### **vehicle curb weight**

Under the Clean Air Act: "Gross vehicle weight rating" (GVWR), "light-duty truck" (LDT), "light-duty vehicle", and "loaded vehicle weight" (LVW) have the meaning provided in regulations promulgated by the EPA Administrator and in effect as of the enactment of the CAA amendments of 1990.

#### **vehicle disposition**

The number of vehicles a household disposes of during the survey year. Disposed vehicles include those sold, traded, or the owner

moved out of the household. The average number of vehicles in the stock is computed using these data. *See also vehicle acquisition.*

#### **vehicle fuel**

The predominant type of fuel purchased during 1991. Data categories are leaded and unleaded gasoline, diesel motor fuel, and "other" which includes propane and gasohol. *See also fuel, gasohol, gasoline, and kerosene.*

#### **vehicle fuel consumption**

Vehicle fuel consumption is computed as the vehicle miles traveled divided by the fuel efficiency reported in MPGs. Vehicle fuel consumption is derived from the actual vehicle mileage collected and the assigned MPGs obtained from Environmental Protection Agency (EPA) certification files adjusted for on-road driving. The quantity of fuel used by vehicles.

#### **vehicle fuel expenditures**

The cost, including taxes, of the gasoline, gasohol, or diesel fuel added to the vehicle's tank. Expenditures do not include the cost of oil or other items that may have been purchased at the same time as the vehicle fuel.

#### **vehicle fuel tank capacity**

The tank's unusable capacity (i.e., the volume of fuel left at the bottom of the tank when the vehicle's fuel pump can no longer draw fuel from the tank) plus its usable capacity (i.e., the volume of fuel that can be pumped into the tank through the filler pipe with the vehicle on a level surface and with the unusable capacity already in the tank). The term does not include the vapor volume of the tank (i.e., the space above the fuel tank filler neck) nor the volume of the fuel tank filler neck.

#### **vehicle identification number (VIN)**

A set of about 17 codes, combining letters and numbers, assigned to a vehicle at the factory and inscribed on a small metal label attached to the dashboard and visible through the windshield. The vehicle identification number (VIN) is a unique identifier for the vehicle and therefore is often found on insurance cards, vehicle registrations, vehicle titles, safety or emission certificates, insurance policies, and bills of sale. The coded information in the VIN describes characteristics of the vehicle such as engine size and weight.

**vehicle in use**

All vehicles in the inventory that are permanently assigned to an agency or in paid seasonal storage.

**vehicle kilometer**

Unit of measurement of traffic representing the movement of an individual Inland Waterways Transport (IWT) vessel or convoy over one kilometer.

**vehicle maintenance**

All activities associated with revenue and nonrevenue (service) vehicle maintenance, including administration, inspection and maintenance, and servicing (cleaning, fueling, etc.) vehicles. In addition, it includes repairs due to vandalism, and accident repairs of revenue vehicles.

**vehicle maneuver**

Last action (maneuver) this vehicle's driver engaged in either just prior to the impact or just before the driver realized the impending danger. *See also* **crash**, and **vehicle role**.

**vehicle mile of travel (VMT)**

A unit to measure vehicle travel made by a private vehicle, such as an automobile, van, pickup truck, or motorcycle. Each mile traveled is counted as one vehicle mile regardless of the number of persons in the vehicle.

**vehicle miles**

(1) Vehicle miles are the miles of travel by all types of motor vehicles as determined by the states on the basis of actual traffic counts and established estimating procedures. (2) The total number of miles traveled by transit vehicles. Commuter rail, heavy rail, and light rail report individual car miles rather than train miles for vehicle miles.

**vehicle miles operated**

Sum of all miles operated by passenger vehicles, including mileage when no passengers are carried. When vehicles are operated in trains, each vehicle is counted separately, e.g., an eight-vehicle train operating for one mile equals eight vehicle miles.

**vehicle occupancy**

(1) The number of persons, including driver and passenger(s) in a vehicle; also includes persons who did not complete a whole trip. Nationwide Personal Transportation Survey (NPTS) occupancy rates are generally calcu-

lated as person miles divided by vehicle miles. (2) The number of people aboard a vehicle at a given time; also known as auto or automobile occupancy when the reference is to automobile travel only.

**vehicle on hand**

All vehicles for which General Services Administration (GSA) has accountability.

**vehicle operations**

All activities associated with the subcategories of the vehicle operations function: transportation administration and support; revenue vehicle operation; ticketing and fare collection; and system security.

**vehicle/pedestrian deviation**

*Aviation.* An entry or movement on an airport movement area by a vehicle operator or pedestrian that has not been authorized by air traffic control (includes aircraft operated by a non-pilot).

**vehicle revenue miles/hours**

The miles/hours a vehicle travels while in revenue service. A transit vehicle is in revenue service only when the vehicle is available to the public and there is a reasonable expectation of carrying passengers that either directly pay fares, are subsidized by public policy, or provide payment through some contractual arrangement. This does not imply that a cash fare must be paid. Vehicles operated in free fare service are considered in revenue service. Vehicle revenue miles/hours exclude travel to and from storage facilities, training operators prior to revenue service, road tests and deadhead travel, as well as school bus and charter services.

**vehicle stock**

The number of vehicles owned or used by a household for personal transportation. A vehicle is defined in terms of a "Vehicle Year." If a vehicle is present in a household for the entire year, it is counted as one vehicle. If a vehicle is present in a household for one-half of the year, it is counted as only one-half of a vehicle. Therefore, the number of vehicles a sample household was considered as having during the year was computed as the days of possession summed over all vehicles in the household, divided by days in a year.



**vehicle type**

A series of motor vehicle body types that have been grouped together because of their design similarities.

**vehicle used on the job**

A vehicle used by anyone in the household for job-related activities, excluding commuting to and from work.

**vehicles available for maximum service**

The number of revenue vehicles available to meet the annual maximum service requirements. This includes spares, out-of-service vehicles, and vehicles in or awaiting maintenance, but excludes vehicles awaiting sale and emergency contingency vehicles.

**vehicular crimes**

Criminal acts committed while operating a motor vehicle (e.g., vehicular manslaughter, vehicular assault, etc.).

**vehicular homicide**

Homicide caused by the unlawful and negligent operation of a motor vehicle. Both intentional conduct and negligence may be the basis for such a charge though statutes vary from state to state as to the elements of the crime.

**veiling luminance**

A luminance added to an object or display which reduces the contrast and may result in disability glare.

**veiling reflection**

A diffusion of the external lighting impinging on a surface or display which tends to result in disability glare.

**vein**

(1) *Anatomy*. A vessel in the cardiovascular system which carries blood back toward the heart. Veins, like arteries, have three coats: an inner coat, a middle coat, and an outer coat; but the coats are not thick and they collapse when the vessel is cut. Many veins, especially the superficial, have valves formed from reduplication of their lining membrane.  
(2) *Mining*. A continuous body of mineral or mineralized rock, filling a seam or fissure in the earth's crust, within defined boundaries in the general mass of the mountain (which boundaries clearly separate it from the neighboring rock), and having a general character of continuity in the direction of its length.

**velar**

Articulated with the tongue on or near the velum.

**velocity**

In a ventilation system, the time rate of movement of air measured in feet per minute.

**velocity control**

See *rate control*.

**velocity pressure**

The kinetic pressure in the direction of flow necessary to cause a fluid at rest to flow at a given velocity. Usually expressed in inches of water when the fluid is air.

**velometer**

A device for measuring air velocity. See *swinging vane anemometer*.

**velum**

See *palatine velum*.

**velvet**

A fabric having a short pile of silk, cotton, or other material on a closely woven backing.

**velveteen**

A fabric resembling velvet which has a short pile and cotton filling.

**vena contracta**

The narrowing in the diameter of an air stream as it enters a duct, hood, or other part of a ventilation system.

**Venn diagram**

A graphical means of illustrating the relationship between sets in set theory, usually using a square or circle to represent a set.

**venom**

Poison, especially a toxic substance normally secreted by a serpent, insect, or other animal.

**venous valve**

A structure within the veins of the legs which permits only unidirectional flow of blood back toward the heart.

**ventifact**

A rock that has been cut, shaped, or faceted by wind-driven particles.

**ventilate**

To circulate fresh air and remove stale and/or contaminated air within a closed space. See also *ventilation*.



**ventilated**

Provided with a means to permit circulation of air sufficient to remove an excess of heat, fumes, or vapors.

**ventilation**

(1) One of the principle methods of controlling health hazards, it can be described generally as the causing of fresh air to circulate and replace contaminated air that is simultaneously removed. *See also suction.* (2) The process of supplying fresh air, especially the constant supplying of oxygen through the lungs. (3) Free discussion, as of one's problems or grievances.

**ventilation air**

Defined as the total air, which is a combination of the air brought into the system from the outdoors and the air that is being recirculated within the building; sometimes, however, used in reference only to the air brought into the system from the outdoors.

**ventilation effectiveness**

*Indoor Air Quality.* The fraction of outdoor air delivered to a space that reaches the occupied zone.

**ventilation rate**

The amount of gases and water vapor exchanged between the atmosphere and the lungs per unit time.

**ventilometer**

An instrument used for measuring the various lung capacities and volumes as a function of time.

**ventral**

Pertaining to the underside of an object, or the side opposite the back of an organism.

**ventricle**

A small cavity or chamber in the brain or heart.

**ventricular fibrillation**

A cardiac arrhythmia characterized by rapid, irregular, and ineffective twitching of the ventricles. Ventricular fibrillation is a frequent cause of cardiac arrest. An apparatus called a defibrillator sometimes is used to alleviate fibrillation. The defibrillator delivers an electric shock to the heart muscle, depolarizing the muscle and ending the irregular contractions. The heart is then able to resume

normal, regular contractions. *See also fibrillation and defibrillation.*

**venturi**

A constriction in a section of pipe or duct to accelerate the fluid and lower its static pressure. A venturi can be used to determine fluid flow by determining the pressure difference between the pressure in the upstream pipe/duct and that in the constriction.

**venturi meter**

Typically a section of piping or duct with a contraction (25 degrees) to a throat with a re-expansion (7 degrees) to the original diameter/size. This device is used to measure mass flow rate based on an empirical formula.

**venturi-type collectors**

A technology used to remove dust from exhaust air by employing a high-velocity air stream that is used to break up water fed into a venturi throat.

**verbal**

Pertaining to words, often referring to spoken words.

**verification by analysis**

The use of techniques such as interpolation or extrapolation of pre-existing data, references, simulation, or modeling to illustrate that a system or subsystem complies with requirements or specifications.

**verification by demonstration**

The use of more qualitative techniques such as observing performance, maintainability or servicing, or other appropriate aspects to verify that a system complies with requirements or specifications.

**verification by inspection**

A technique for confirming that a product meets design specifications and requirements through the use of vision or simple measuring devices and reviewing supporting documentation.

**verification by similarity**

The use of techniques such as a comparison with the design, manufacturing, and quality control standards of a previously existing product that has met the same or greater criteria to indicate that the item under consideration will likely meet the necessary requirements and specifications.

**verification by test**

A technique for confirming that a product meets specifications/requirements through the use of measurements taken during and/or following the controlled application of appropriate functional and environmental stimuli, often with the use of sophisticated lab test equipment, recorded data, and some analysis of that test data.

**vermiculite**

A mineral with a platelet-like crystalline structure that is lightweight and highly water absorbent.

**vernal equinox**

The equinox at which the sun approaches the Northern Hemisphere and passes directly over the equator. Occurs around March 20.

**vernier**

A smaller scale, in association with a larger one, which is divided to permit interpolation between the divisions of the larger scale.

**vernier acuity**

A measure of the alignment judging ability of the eyes, determined by the reported existence or degree of any lack of alignment or co-linearity of two parallel lines, with one placed vertically above the other in a plane.

**verruca**

(1) A lesion of the skin of viral origin, commonly small, round and raised, with a rough, dry surface. More commonly referred to as a wart. (2) A wart-like growth on any surface, as on the endocardium.

**vertebra**

One of the bones which form part of the spine. The vertebrae support the body and provide the protective bony corridor through which the spinal cord passes. The 33 bones that make up the spine differ considerably in size and structure according to location. There are seven cervical (neck) vertebrae, 12 thoracic (high back), five lumbar (low back), five sacral (near the base of the spine), and four coccygeal (at the base). The five sacral vertebrae are fused to form the sacrum, and the four coccygeal vertebrae are fused to form the coccyx. *See spine.*

**vertebral column**

*See spine.*

**vertex**

The highest point on the top of the head with the head oriented in the Frankfort plane. Commonly referred to as *crown*.

**vertex plane**

That horizontal plane which intersects the top of the head and is parallel to the floor or other reference surface when in an erect posture.

**vertical grip reach, sitting**

The vertical distance above the sitting surface which an individual can reach while gripping a pointer held in a clenched fist perpendicular to the longitudinal axis of the arm. Measured with the individual sitting erect with the shoulder rotated upward 180° or as close to that as possible, and the elbow and wrist fully extended.

**vertical grip reach, standing**

The vertical distance above the floor which an individual can reach while gripping a pointer held in a clenched fist perpendicular to the longitudinal axis of the arm. Measured with the individual standing erect with the shoulder rotated upward 180° or as close to that as possible, and the elbow and wrist fully extended.

**vertical reach**

The vertical distance from the floor or other reference surface to the tip of the middle finger (digit III) when one arm, wrist, the hand, and the fingers are extended vertically. Measured with the individual standing erect.

**vertical scroll**

To view text or alphanumeric information on a screen by advancing vertically line-by-line under operator control to examine the information in a file above or below that currently visible.

**vertical standard**

An OSHA standard that essentially has application in only one industry, such as construction.

**vertical trunk circumference, sitting**

An off-vertical surface loop distance around the torso, from the crotch, passing diagonally up and over the midshoulder, down through the small of the back, to return to the crotch passing over the posterior protuberance of the buttock. Measured with the individual sitting erect.

**vertical trunk circumference, standing**

An off-vertical surface loop distance around the torso, from the crotch, passing diagonally up and over the midshoulder, down through the small of the back, to return to the crotch passing over the posterior protuberance of the buttock. Measured with the individual standing erect with the body weight equally distributed on both feet.

**vertigo**

Dizziness or the sensation that the environment is revolving around us.

**veruca**

Wart.

**very high frequency (VHF)**

That portion of the electromagnetic spectrum consisting of radiation frequencies between 30 MHz and 300 MHz.

**very high frequency (VHF) communications**

Provides radio voice communications between aircraft and ground stations, also between aircraft. Very high frequency (VHF) is limited in angle (line of sight) and usually used for air traffic communications.

**very high frequency omnidirectional radio range (VOR)**

Used as the basis for navigation in the National Airspace System.

**very large crude carrier (VLCC)**

A crude oil carrying ship of between 160,001 and 320,000 deadweight tons.

**very low frequency (VLF)**

That portion of the electromagnetic spectrum consisting of radiation frequencies between 10 kHz and 30 kHz.

**vesicant**

An agent capable of producing small circumscribed elevations of the skin that contain fluid. Some vesicant gases (such as mustard gas) have been used as chemical warfare agents.

**vesicle**

A small blister on the skin.

**vessel**

(1) According to OSHA, the term vessel includes every description of watercraft or other artificial contrivance used or capable of being used as a means of transportation on water,

including special purpose floating structures not primarily designed for or used as a means of transportation on water. (2) Every description of watercraft, used or capable of being used as a means of transportation on the water. (3) Tankers used to transport crude oil and petroleum products. Vessel categories are as follows: Ultra Large Crude Carrier (ULCC), Very Large Crude Carrier (VLCC), Other Tanker, and Specialty Ships Liquefied Petroleum Gas (LPG)/Liquefied Natural Gas (LNG). (4) A ship, brig, sloop, or other craft used, or capable of being used, in navigation on water. (5) With regard to anatomy, a channel for carrying fluid, such as blood (blood vessel) or lymph (lymphatic vessel). (6) A receptacle used in laboratory work, usually constructed of glass, porcelain, or other material.

**vessel bunkering**

Includes sales for the fueling of commercial or private boats, such as pleasure craft, fishing boats, tugboats, and ocean-going vessels, including vessels operated by oil companies. Excluded are volumes sold to the U.S. Armed Forces.

**vessel kilometer**

Unit of measurement representing the movement of an inland waterway transport (IWT) vessel over one kilometer.

**vestibular**

See *vestibule*.

**vestibular apparatus**

That portion of the vestibular system physically located within the inner ear for transduction of mechanical stimuli.

**vestibular membrane**

A delicate membrane separating the cochlear duct from the scala vestibuli in the cochlea. Also called *Reissner's membrane*.

**vestibular nerve**

That branch of the vestibulocochlear nerve which carries equilibrium information from the inner ear to the brain.

**vestibular nystagmus**

That nystagmus produced either from stimulation of the labyrinth or a diseased/damaged vestibular system.

**vestibular system**

Those structures consisting of the otoliths, semicircular canals, vestibular nerve, and related sensory structures of the inner ear which transduce head motion, orientation, and equilibrium/balance and convey that information to the brain.

**vestibule**

A cavity within the osseous labyrinth of the inner ear which interconnects the cochlea and the semicircular canals.

**vestibulo-ocular reflex (VOR)**

Those reflex eye movements during a head movement which are intended to maintain a stationary image on the retina.

**vestibulocochlear nerve**

The eighth cranial nerve, having a sensory function and which combines the vestibular and auditory branches.

**Veterans Administration**

An independent federal agency that administers a system of benefit programs for veterans and their dependents. These benefits include compensation payments for disabilities or death related to military service; pensions; education and rehabilitation; home loan guaranty programs; burial, including cemeteries, markers, flags, etc.; and a comprehensive medical program involving a widespread system of nursing homes, clinics, and hospitals. Effective in 1989, the former Veterans Administration became the Department of Veterans Affairs, and was elevated to cabinet level status.

**veto power**

Executive's power to conditionally prevent acts passed by legislature, which have not yet become law, from becoming law.

**VFR**

See *visual flight rules*.

**viability**

Ability to remain alive in a free state.

**viable**

Living.

**vibrating conveyor**

See *oscillating conveyor*.

**vibration**

The act of vibrating. A rapid linear motion of a particle or an elastic solid about an equilibrium position.

**vibration isolator**

A resilient support that tends to isolate a system from steady-state excitation.

**vibration sense**

The sensing of vibration via repeated activation of the touch/pressure receptors in the skin.

**vibration syndrome**

Any sign or symptom associated with the use of vibrating tools or equipment, ranging from numbness, blanching, or tingling to a recognized disease. See also *Raynaud's syndrome*.

**vibration white-hands disease**

A vascular disorder. See *Raynaud's syndrome*.

**Vibroacoustic Payload Environment Prediction System (VAPEPS)**

A computer modeling program and database for predicting vibroacoustic levels within vehicles.

**vibroacoustics**

The field of study dealing with the combined or interrelated effects of sound and vibration on systems and/or people.

**vibrotactile stimulation**

That application of a mechanical vibration by any means to cause displacement of the touch/pressure receptors in the skin.

**vicarious liability**

The imposition of liability on one person for the actionable conduct of another, based solely on a relationship between the two persons.

**victim**

The person who is the object of a crime or tort, as the victim of a robbery is the person robbed.

**video display terminal (VDT)**

(1) A computer workstation having a monitor capable of processing one or more types of television signals or other displays, and having one or more computer input devices for interaction. (2) Computer screen-based terminal.

**video display unit (VDU)**

A monitor capable of processing one or more types of television format signals for viewing, with no interactive controls available other than

simple channel selection, picture adjustments, volume, etc.

**videography**

The use of video electronic media for the acquisition, presentation, and/or study of moving visual images.

**view**

To focus one's visual attention on something.

**vigilance**

A state in which an individual sustains a high level of attention in an attempt to detect a signal, a change in signal, or a particular activity.

**villi**

Minute, worm-like vascular processes on certain membranes (singular: villus).

**VIN**

See *vehicle identification number*.

**vindictive damages**

See *exemplary damages*.

**vinyl asbestos tile (VAT)**

A floor-covering material which contains asbestos.

**vinyl chloride**

A chemical compound, used in producing some plastics, that is believed to be carcinogenic.

**violation**

Injury; infringement; breach of right, duty, or law; ravishment; seduction. The act of breaking, infringing, or transgressing the law.

**violation notice**

Written notification issued by a government agency and served on the party alleged to be in violation. Sometimes called a *notice of violation (NOV)* or *notice of noncompliance (NON)*.

**violence**

Unjust or unwarranted exercise of force, usually with the accompaniment of vehemence, outrage, or fury.

**violent death**

Death caused by violent external means, as distinguished from natural death as caused by disease or the wasting of the vital forces.

**violet**

That hue typically perceived when a normal retina is stimulated with electromagnetic ra-

diation with wavelengths between approximately 390 nm to 450 nm.

**virga**

Precipitation that falls from a cloud but evaporates before reaching the ground. See also *fall streaks*.

**virgin material**

Under the Federal Solid Waste Disposal Act: A raw material, including previously unused copper, aluminum, lead, zinc, iron, or other metal or metal ore, any undeveloped resource that is, or with new technology will become, a source of raw materials.

**virgin wool**

That wool fresh from clipping of sheep and used for the first time.

**virtual environment**

A computer-generated, three-dimensional environmental simulation in which the user is able to sense and interact with that environment via some set of transducers or computer input devices. Also referred to as *virtual presence*, *artificial reality*, *virtual reality*, and *virtual image display*.

**virtual image**

An image in which light appears to emanate from one or more points, as behind a mirror or as presented in a computer-driven image generator, but in reality does not.

**virtual image display**

See *virtual environment*.

**virtual memory**

*Computing.* Virtual memory is not in the RAM chips. It is space on the hard drive disk that the computer uses as if it were RAM. With virtual memory, the applications can edit files that would otherwise be too large to fit in physical RAM. Windows™ uses temporary or permanent swap files to create memory. Also called *disk memory*. See also *swap file*, *temporary swap file* and *permanent swap file*.

**virtual presence**

See *virtual environment*.

**virtual reality**

See *virtual environment*.

**virtual workplace**

A type of virtual environment which provides an analog to an individual's actual workspace.



**virulent**

Extremely poisonous or venomous. Capable of overcoming bodily defensive mechanisms.

**virus**

(1) A submicroscopic, non-cellular particle, composed of a nucleic acid core and a protein shell that reproduces only within host cells and is the cause of many diseases. It is the smallest form of microorganisms capable of causing disease. A virus requires susceptible host cells for multiplication and activity. Viruses are so elusive that in most instances they cannot be identified and observed by the conventional methods of microbiology. The electron microscope makes it possible to "see" viruses through the minuscule pores of special filters. Viruses thrive only within the cells of living hosts, so tissue cultures are used to grow viruses for use in vaccines. A virus has no metabolic activity of its own, but it has a very orderly structure, so uniform that some viruses can be crystallized much like common salt. The most important substance in viruses is nucleoprotein, a compound of protein and nucleic acid, which is a substance common to all living matter. The nucleic acid, either deoxyribonucleic acid (DNA) or ribonucleic acid (RNA), contains the "instructions" and mechanisms that allow the virus to control the metabolic activity of the cells it infects. The nucleoprotein of the virus may be surrounded by one or more protein membranes. Viruses are parasitic. They attach themselves to a living cell of a plant, animal, or human body, inject nucleoprotein into the cell and control the cell's normal metabolic mechanisms. The cell proceeds to make vital structures and assembles the units into complete viruses. The cell bursts, dies, and releases countless viruses which can then invade other cells. In some cases, the virus may remain inactive or dormant for long periods before taking over control of cellular metabolism. In other cases, the virus may force the cell to make new cells as well as new viruses. In addition to damaging the host by destroying cells, viruses may produce toxins. Viruses also act as antigens, substances the body recognizes as being foreign and combats by producing antibodies. Viruses are causative organisms of a variety of infectious diseases, including the common cold, yellow fever, childhood diseases, and certain types of pneumonia and encephalitis.

(2) *Computing.* A set of software code instructions that damages or erases the information, work files, or programs on a computer.

**viscera**

See *viscus*.

**viscosity**

The resistance of fluid flow. A measure of that resistance which a liquid substance exhibits to flow over itself. See also *molecular viscosity* and *eddy viscosity*.

**viscous**

Having a high viscosity.

**viscus**

An organ within one of the bodily cavities. Plural is *viscera*.

**visibility**

(1) The greatest distance an observer can see and identify prominent objects. (2) A measure of the capability of being seen through a combination of factors such as luminous intensity, contrasts, intervening conditions between the observer and object(s), object size, and distance from the observer. (3) The recognition of an individual or group by another individual, group, or the public at large through repeated appearances, media coverage, or other means.

**visibility limit**

See *visibility range*.

**visibility meter**

A photometer which measures the amount of reduction in light intensity required to bring the visibility of objects to their threshold value.

**visibility reference function**

A graphical curve or mathematical equation providing the relationship between an individual's ability to detect an object against a background and the background luminance.

**visible**

Pertaining to radiant energy in the electromagnetic spectral range that is visible to the human eye.

**visible emissions**

An emission from a source which is visually detectable without the aid of instruments.

**visible light**

Electromagnetic energy having wavelengths within the range of 380 to 770 nanometers.



**visible spectrum**

That range of wavelengths and/or frequencies of the electromagnetic spectrum which the eye is capable of normally detecting, approximately 380 nm to 750 nm.

**vision**

The capacity for seeing; the act of seeing. The basic components of vision are the eye itself, the visual center in the brain, and the optic nerve, which connects the two. *See also eyeball.*

**vision test**

Any eye test for measuring visual acuity or color sensitivity. *See Snellen test, Ishihara test, and Stilling test.*

**visor**

Any device which may be placed over or in front of the eyes to shield or protect them from intense light radiation or glare, blast effects, wind, blown grit or dust, or any other noxious physical agent.

**visual acuity**

A measure of the ability to resolve distinct objects or fine detail with the eye. *See also Snellen acuity, vernier acuity, stereoscopic acuity, and resolution acuity.*

**visual adaptation**

A change in visual sensitivity over prolonged viewing of a particular intensity, color, or other aspect of light.

**visual angle**

The angle subtended at the nodal point of the eye by the height or width of an object in the visual field.

**visual axis**

An imaginary line, internal to the eye, projected from the point being fixated, through the lens, to the center of the fovea. The visual axis is separated from the optical axis by about 4°.

**visual clutter**

Having too much distortion of the detail in the visual field or on a display such that a sensory overload condition exists. *See also visual noise.*

**visual coding**

Any type of coding which relies wholly or primarily on visual modality.

**visual color discrimination**

*See color discrimination.*

**visual colorimetry**

The use of human eyes to judge relative similarities and differences in hues. *See also visual photometry.*

**visual comfort**

Having an adequately lighted visual environment, without glare and with pleasing hue(s).

**visual comfort probability (VCP)**

An estimate of the probability that a given observer will rate a given lighting system as equal to or more comfortable than the visual comfort-discomfort boundary under given conditions.

**visual correspondence**

The use of a visual display which is adjusted to the position of the operator's head.

**visual environment**

That external physical and psychological volume having characteristics generated by all of the following: a) the luminous environment, b) the structure of the space, and c) any objects within that space.

**visual field**

That part of the visual environment which can be seen by the eye(s) at any given instant with the head and eyes stationary.

**visual field defect**

Any impairment where an individual cannot see one or more regions within the visual field.

**visual flight rules (VFR)**

Rules that govern the procedures for conducting flight under visual conditions. The term VFR is also used in the U.S. to indicate weather conditions that are equal to or greater than minimum visual flight rules (VFR) requirements. In addition, it is used by pilots and controllers to indicate the type of flight plan.

**visual flight rules (VFR) conditions**

Weather conditions equal to or better than the minimum for flight under visual flight rules.

**visual flight rules (VFR) flight**

Flight conducted in accordance with visual flight rules.

**visual flight rules (VFR) over-the-top**

With respect to the operation of aircraft, means the operation of an aircraft over-the-top under visual flight rules when it is not being operated on an instrument flight rules (IFR) flight plan.

**visual flight rules (VFR) terminal area charts**

Depict Class B airspace which provides for the control of segregation of all the aircraft within Class B airspace. The chart depicts topographic information and aeronautical information which include visual and radio aids to navigation, airports, controlled airspace, restricted areas, obstructed and related data.

**visual flight rules (VFR) tower**

An airport traffic control tower providing takeoff and landing services only. It does not provide approach control services.

**visual line**

See *visual axis*.

**visual meteorological conditions (VMC)**

Meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling equal to or better than the specified minima.

**visual noise**

An array of elements or images on a display or in the visual field which appear to or are intended to have no pattern. See also *visual clutter*.

**visual perception**

The process of, or the product from, interpreting visual stimuli.

**visual persistence**

See *afterimage*.

**visual photometer**

Any device for judging the equality of brightness of two surfaces using the eyes, rather than instrumentation hardware. See also *physical photometer*.

**visual photometry**

The study or process of using the eye instead of a photoelectric device as the sensing element for brightness differences. See also *visual colorimetry*.

**visual pigment**

Any of the chemicals involved in transduction of light energy to chemical energy in the retina.

**visual position constancy**

The tendency for the visual field to appear stable as the observer moves his/her head or eyes, due to the vestibulo-ocular reflex.

**visual purple**

See *rhodopsin*.

**visual range**

The maximum distance at which the contrast between one or more distinct objects and their background enables them to be distinguished by an observer under given environmental conditions. Also referred to as *visibility limit*.

**visual runway**

A runway without an existing or planned straight-in instrument approach procedure.

**visual space**

The integrated sum of all possible visual fields from a given body location, given only for those bodily movements which would normally be available to an individual under specified conditions.

**visual strain**

See *eyestrain*.

**visual surround**

All portions of the visual space except that pertaining to the task at hand.

**visual task**

Any task or portion of a task which requires vision and the perception/integration of visual stimuli for its performance.

**visualization**

The ability to create a mental visual image, either of some original object or an imagined object.

**vital capacity**

The maximum volume of air which can be expelled from the lungs after a maximal inspiration. May also be referred to as *lung vital capacity* and/or *respiratory capacity*.

**vital statistics**

Data that record significant events and dates in human life, such as births, deaths, marriages, etc.

**vitamin**

One of a group of organic compounds not normally produced by the body but which is required in small quantities for normal body health and metabolism. Vitamins help transform other food substances into bones, skin, glands, nerves, brain tissues, and blood. The major vitamins are designated by the letters A, C, D, E, K, and P, and the term B Complex. Some of these, the B vitamins and Vi-

tamin C, can be dissolved in water; the rest are soluble in fat. Vitamins do not resemble each other chemically except for their solubility. This quality of solubility is important in absorption of vitamins from the intestinal tract and in certain deficiency diseases.

**vitreous humor**

The transparent, gelatinous substance which fills the posterior cavity of the eyeball. Also called *vitreum* and *vitrina*.

**vitrification**

The process in which high temperatures are employed to form glass from ceramic and some mineral materials.

**VLCC**

See *very large crude carrier*.

**V/m**

Volts per meter.

**VMC**

See *visual meteorological conditions*.

**VMT**

See *vehicle mile of travel*.

**VOC**

See *volatile organic compound*.

**vocabulary**

The number of words or terms readily available to an individual or computer for online use.

**vocal**

Pertaining to certain speech organs or structures; conveyed using the voice.

**vocal cord**

One of two ligaments within the larynx which, on movement, are involved in speech or other sound production. Also *vocal chord* and *vocal ligament*.

**vocal fold**

A thin mucous membranes covering the vocal cord.

**vocal ligament**

See *vocal cord*.

**vocal tract**

The combination of passageways and enclosing structures which is involved in the mechanical production of speech sounds.

**vocalis**

A medial portion of the thyroarytenoid muscle which attaches to the vocal cord.

**vocational aptitude test**

Any examination used to determine for which occupation an individual is best suited.

**vocational guidance**

The use of results from one or more vocational aptitude tests, interviews, trend forecasts, or other measures to counsel an individual in job selection.

**vocoder**

A device which produces voice-like sounds, and which, through the appropriate combinations of sounds, can synthesize speech.

**vog**

Term used to describe airborne particulate matter consisting primarily of volcanic ash and other volcano-originated micro- and macroscopic debris, water vapor (from steam), smoke, volcanic gases, and, depending upon the location of the erupting or venting volcano, saltwater vapor from ocean contact with lava flows. In high concentrations, vog can be an extremely irritating inhalation hazard for some individuals.



*Vog being created by the Kilauea volcano in Hawaii. Below, lava flowing into the ocean further contributes to the vog problem. If trade winds are right, the vog can blow over populated areas and potentially affect thousands of people.*



**voice**

To carry out the purposeful vibration of the vocal cords to produce a phoneme.

**voice-activated (VOX)**

Pertaining to a piece of equipment having the capability to initiate certain operations in response to sounds in the frequency range of the human voice. Synonymous with *voice operated*.

**voice recognition**

(1) The ability to determine that vocal sounds are being produced by a specific individual.  
(2) The use of a computer to compare the spectra of selected spoken words by one or more specified individuals with those spectra of words previously established in memory to perform a match.

**voiced sound**

Any sound occurring as quantities of subglottal air are forced against tightened vocal cords, causing them to open and close at certain intervals, and air to resonate in vocal cavities.

**voiceprint**

A selected spectral density function of an individual's speech.

**voir dire**

*Law (French)*. To speak the truth. This phrase denotes the preliminary examination which the court and attorneys make of prospective jurors to determine their qualification and suitability to serve as jurors. Preemptory challenges or challenges for cause may result from such examination.

**vol.**

Volume.

**vola**

The palm of the hand or the sole of the foot. Also called *volar surface*.

**volatile**

Describes chemicals that tend to evaporate rapidly (such as ether, chloroform, and benzene).

**volatile flammable liquid**

A flammable liquid having a flash point below 100°F (38°C) or whose temperature is above its flash point.

**volatile organic compound (VOC)**

(1) Any organic compound which participates in atmospheric photochemical reactions

except those designated by the EPA as having negligible photochemical reactivity. (2) Compounds that evaporate from the many housekeeping, maintenance, and building products made with organic chemicals. These compounds are released from products that are being used and that are in storage. In sufficient quantities, VOCs can cause eye, nose, and throat irritations, headaches, dizziness, visual disorders, memory impairment; some are known to cause cancer in animals; some are suspected of causing, or are known to cause, cancer in humans. At present, not much is known about what health effects occur at the levels of VOCs typically found in public and commercial buildings.

**volatile synthetic organic chemicals**

Chemicals that tend to volatilize or evaporate from water.

**volatility**

The measure of the tendency of a chemical to vaporize or evaporate at ambient conditions.

**volatilization**

Physical transfer process through which a substance undergoes a change of state from a solid or liquid to a gas.

**volitional movement**

See *active movement*.

**volt (V)**

(1) The unit of electromotive force. (2) A unit of electrical potential or electromotive force; that potential difference between two points of a conductor carrying a constant current of one amp when the power dissipated between those two points is one watt.

**volt-ampere (VA)**

The SI unit of apparent electrical power; the mathematical product of voltage and amperage, either available to or used by a system.

**voltage**

(1) *Nominal*. A nominal value assigned to a circuit or system for the purpose of conveniently designating its voltage class (as 120/240, 480Y/277, 600, etc.). The actual voltage at which a circuit operates can vary from the nominal within a range that permits satisfactory operation of equipment. (2) *Circuit*. The greatest root-mean-square (effective) difference of potential between any two conductors of the circuit concerned. (3) *To*

*Ground.* For grounded circuits, the voltage between the given conductor and that point or conductor of the circuit that is grounded. For ungrounded circuits, the greatest voltage between the given conductor and any other conductor of the circuit.

**volume**

(1) The amount of three-dimensional space which an object occupies. (2) The loudness of an audio output.

**volume control**

A potentiometer or other device which changes the loudness of an audio output from an amplifier.

**volume display**

Any display which indicates relative volume of an audio output or input. Also referred to as *volume indicator*.

**volume flow rate**

The quantity of air flowing in a ventilation system measured as cubic feet per minute.

**volume indicator**

See *volume display*.

**volume velocity ( $U_v$ )**

The flow rate of a medium due to a sound wave through a cross-sectional or surface area.

**volumetric analysis**

The measurement of the volume of a liquid reagent of known concentration that is required to react completely with a substance whose concentration is being determined. Titration of acids with a base, or vice versa, is an example of this type of analysis.

**volumetric inspection**

A nondestructive testing (NDT) method to determine the presence of discontinuities throughout the volume of a material. See also *nondestructive evaluation (NDE)*.

**voluntary**

Being under willful control.

**voluntary disclosure**

The Federal Sentencing Guidelines (FSGs) provide incentives for disclosing suspected misconduct, offering a mitigation credit for companies that make voluntary disclosures. The Guidelines also threaten to bar any compliance program credit otherwise available if there is an “unreasonable delay in self-

reporting.” Such disclosures should be carefully drafted and reviewed according to the facts discovered. See also *self-reporting systems, mitigating factors, and effective compliance program*.

**voluntary exposure to unnecessary danger**

An intentional act which reasonable and ordinary prudence would pronounce dangerous. Intentional exposure to unnecessary danger, implying a conscious knowledge of the danger.

**voluntary informed consent**

A voluntary agreement by a potential experimental subject to allow himself to be exposed to the conditions of a test. Also called informed consent.

**voluntary muscle**

A muscle which is normally controllable by the individual without any highly specialized training.

**voluntary standard**

Any standard which is complied with on a voluntary basis, without any legal requirement or consensual agreement to do so.

**vomer**

A facial/skull bone in the midsagittal plane which forms part of the nasal septum.

**vomit**

(1) Matter expelled from the stomach by the mouth. (2) To forcibly eject swallowed material from the stomach.

**vomititus**

That material ejected from the gastrointestinal tract during the process of vomiting.

**Von Frey filament**

Any of a set of fibers of various lengths and thicknesses which is calibrated to exert a given force when pressed on the skin. Sometimes called *Von Frey hair*.

**VOR**

(1) Very high frequency omni-direction range. (2) See *vestibulo-ocular reflex*.

**vortex**

A pattern of curving lines radiating from a common center.

**vorticity**

A measure of the spin of a fluid, usually small air parcels. *Absolute vorticity* is the combined vorticity due to the earth's rotation and the

vorticity due to the air's circulation relative to the earth. *Relative vorticity* is due to the curving of the air flow and wind shear.

**VOX**

See *voice-activated*.

**vox**

The peculiar suppressed voice of true cholera.

**vp**

Vapor pressure.

**VP**

Velocity pressure.

**VPP**

*OSHA*. Voluntary Protection Program.

**VS**

Visible spectrophotometry.

**vulnerability analysis**

Assessment of elements in the community that are susceptible to damage should a release of hazardous materials occur.

**vulnerable zone**

An area over which the airborne concentration of a chemical involved in an accidental release could reach the level of concern.

**v/v**

Volume to volume.

**VWF**

Vibration-induced white fingers. See also *Raynaud's syndrome*.



# W

## W

Watt(s).

## WAC

See *world aeronautical charts*.

## wage

The monetary compensation for services provided to an employer.

## Wage and Hour Law

See *Fair Labor Standards Act*.

## wage incentive

A financial reward reflected in a worker's wages for greater than normal performance.

## wage incentive plan

An incentive plan for determining additional wages to be paid an individual or group based on exceeding standard or normal performance, and having the intent to increase output.

## wage rate

The hourly or other time-based wage described in monetary terms. See also *piece rate*.

## Wagner Act

A federal law, passed in 1935, that established the most basic union rights. It prohibited several employer actions (such as attempting to force employees to stay out of a union) and labeled these actions "unfair labor practices." It also set up the National Labor Relations Board to help enforce the new labor laws. See also *Taft-Harley Act*.

## waist

(1) That level above the hip and below the thorax at which the torso has a minimum breadth when viewed from the front. If such a level is not apparent, as in pregnant or obese individuals, use the level at which the belt is worn. (2) The level of omphalion.

## waist back length

The surface distance, along the spine, from the waist level to cervicale. Measured with the individual standing erect and the weight balanced equally between both feet.

## waist breadth

The horizontal linear distance across the torso at the waist. Measured with the individual standing erect.

## waist circumference

The surface distance around the torso at waist height. Measured without tissue compression with the individual standing erect, the weight equally balanced on both feet, and the waist muscles relaxed.

## waist circumference, sitting

The surface distance around the torso at that level represented by the waist height. Measured without tissue compression, with the individual sitting erect.

## waist depth

The horizontal linear distance from the back to the front of the torso at the waist. Measured with the individual standing erect, the weight evenly distributed on both feet, and the torso muscles relaxed.

## waist depth, sitting

The waist depth in a sitting individual. Measured with the individual sitting erect and the torso muscles relaxed.

## waist front from cervicale

The surface distance from cervicale to the waist level, passing along the base of the neck to the neck-shoulder intersection and following the contour of the anterior body to the waist level in the midsagittal plane. Measured with the individual standing erect and the torso muscles relaxed.

## waist front length

The surface distance in the midsagittal plane from the waist level to suprasternale. Measured with the individual standing erect and the torso muscles relaxed.

## waist height

The vertical distance from the floor or other reference surface to the waist. Measured with the individual standing erect.

## waist height, sitting

The vertical distance from the upper sitting surface to the waist level. Measured with the individual sitting erect.

## waiting line

See *queue*.

## waiting time

See *delay time* or *idle time*.

## walk

(1) *General*. Includes jogging, walking, etc., provided the origin and destination are not the

same. (2) *Maritime Navigation*. To use the rudders opposite to the screws so as to cause the tow to move sideways in close maneuvering.

**walk-around**

An OSHA term for becoming familiar with the worksite and its employees by simply strolling through the places where employees are at work and obtaining a mental "snapshot" view of what they are doing and the processes used by the employer.

**walking**

A colloquial term for a flanking maneuver.

**walking ventilation**

A measure of the amount and content of air expired while performing a mild exercise, usually consisting of walking on a level treadmill. Measured after a few minutes of walking at a slow-to-moderate pace.

**wall cloud**

An area of rotating clouds that extends beneath a severe thunderstorm and from which a funnel cloud may appear. Also called a *collar cloud*.

**wall hole**

An opening less than 30 inches but more than 1 inch high, of unrestricted width, in any wall or partition; such as a ventilation hole or drainage scupper.

**wall opening**

An opening at least 30 inches high and 18 inches wide, in any wall or partition, through which persons may fall; such as a yard-arm doorway or chute opening.

**walleye**

(1) Leukoma, a white opacity of the cornea. A common cause is degeneration of the cornea from longstanding, untreated syphilis. Other possible causes include inflammation of the cornea, corneal ulcer, and trachoma. (2) Exotropia, a congenital defect similar to crossed eyes except that the visual axes diverge outward rather than inward. Also called *divergent strabismus*.

**Walsh-Healey Act**

Federal Act (1936) which provides that government contractors should pay not less than the prevailing minimum wage, observe the eight-hour day and the forty-hour week, employ no convict labor, and no female under 18

years of age or male under 16 years of age, and allow no hazardous or unsanitary working conditions in their plants.

**wander**

An apparent rapid shift of the target position from its mean on a radar screen. Also called *target glint* and *target scintillation*.

**wane**

Bark, or the lack of wood from any cause, on the corner of a piece of wood.

**wanton**

Reckless, heedless, malicious. Characterized by extreme recklessness or foolhardiness. Reckless disregard of the rights or safety of others or of the consequences.

**wanton act**

One done in malicious or reckless disregard of the rights of others, evincing a reckless indifference to consequences to the life, or limb, or health, or reputation, or property rights of another, and is more than negligence, more than gross negligence, and is such conduct as indicates a reckless disregard of the just rights or safety of others or of the consequences of the action (equivalent in its results to willful misconduct).

**wanton and reckless misconduct**

Occurs when a person, with no intent to cause harm, intentionally performs an act so unreasonable and dangerous that he/she knows, or should know, that it is highly probable that harm will result.

**wanton injury**

Injury produced by conscious and intentional wrongful act, or omission of known duty with reckless indifference to consequences. It must be predicated upon actual knowledge of another's peril and a failure to take available preventative action knowing that such failure will probably result in injury.

**wanton misconduct**

Act or failure to act, when there is a duty to act, in reckless disregard of the rights of another person, coupled with a consciousness that injury is a probable consequence of the act or omission.

**wanton negligence**

Heedless and reckless disregard for another's rights with consciousness that the act or omission to act may result in injury to another.

**war risk**

The possible aggressive actions against a ship and its cargo by a belligerent government. This risk can be insured by a marine policy with a war risk clause.

**warehouse**

A place for the reception, delivery, consolidation, distribution, and storage of goods/cargo.

**warfarin**

A compound used as an anticoagulant.

**warm blooded**

See *homeothermy*.

**warm boot**

Term describing the act of restarting computer equipment without actually turning it off. This is usually accomplished by pressing a restart button on the processing unit frame or, more commonly, simultaneously pressing a combination of keys on the keyboard (i.e., CTL-ALT-DEL).

**warm cloud**

Cloud that forms at temperatures above freezing.

**warm color**

A red or yellow color; a color which seems to be brighter than another for a given intensity.

**warm-core low**

A low-pressure area that is warmer at its center than its periphery. Topical cyclones exhibit this temperature pattern.

**warm front**

A front that moves in such a way that warm air replaces cold air.

**warm occlusion**

See *occluded front*.

**warm sector**

The region of warm air within a wave cyclone that lies between a retreating warm front and an advancing cold front.

**warm-up**

(1) The brief process of an individual stretching muscles, doing practice problems, or other activity as appropriate to the situation prior to participating in some form of exertion or performance test. (2) The process of the functioning parts of an electrical or electromechanical system becoming operational after the application of power.

**warm-up time**

*Instrument.* The period of time from when an instrument is turned on to the time when it will perform to its specifications.

**warning**

(1) A method of notification of a potential hazard and the recommended actions to take to reduce risk. (2) A statement either attached to or otherwise accompanying some product which provides information about the safe use of the product. See also *warning label*. (3) A signal that a hazardous situation exists and that immediate corrective action is required to avert possible loss of life and property. Usually announced via some audible and/or visible means. (4) A statement issued by local authorities, or weather/other authorized officials indicating that a specified threat is highly probable in a certain region within a specified period of time. See also *watch*.

**warning area**

Airspace which may contain hazards to non-participating aircraft in international airspace.

**warning label**

A label containing text, iconic, and/or graphic information attached to some product indicating some type of potential hazard. See also *warning*.

**warning property**

(1) *General.* That property of a substance that enables a worker to identify a potential excessive exposure situation while wearing a respirator or while in the work environment. If the odor threshold of a material is below the acceptable exposure limit it can serve to alert a worker of the presence of a substance at an excessive level and to take appropriate measures to prevent an excessive exposure. (2) *Respiratory Protection.* A contaminant with an odor threshold above its permissible exposure limit does not provide adequate warning to wearers of air purifying respirators if breakthrough occurs. Thus, air purifying respiratory protection is not recommended for substances with poor warning properties. Some substances (e.g., hydrogen sulfide) can cause olfactory fatigue and even though they have a low odor threshold (i.e., below their exposure limit), the use of air purifying respirators is not recommended for protection against them.

**warp**

A twisting effect due to uneven stresses.

**warrant**

A document issued by a court with jurisdiction to approve search and seizure of evidence of crimes according to criminal procedure. A civil warrant would authorize an administrative inspection with civil consequences like enforcement orders or permit revocation.

**warrantless arrest**

An arrest of a person without a warrant. It is generally permissible if the arresting officer has reasonable grounds to believe that the person has committed a felony or if the person has committed a misdemeanor amounting to a breach of the peace in the officer's presence. If probable cause exists, no warrant is required to apprehend a suspected felon in a public place.

**warranty**

(1) A pledge that a certain matter is true. For example, a seller may warrant that the facility has obtained all federal and state environmental permits required for continued operation. (2) The written guarantee issued with new motor vehicles or related equipment. It defines the manufacturer's responsibility for the repair or replacement of defective parts and other services provided as part of the purchase price. A warranty can be nullified if the user does not follow certain stipulations of the manufacturer, such as preventive maintenance.

**wart**

A veruca. A small, hard, abnormal growth on the skin or adjoining mucous membrane, caused by a virus. Warts are generally more common among children and young adults than among older persons. Most warts are less than a quarter of an inch in diameter. They may be flat or raised, dry or moist. Usually they have a rough and pitted surface, either flesh-colored or darker than the surrounding skin. Warts usually develop on the exposed parts of the fingers and hands, but also on the elbows, face, scalp, and other areas. When on an especially vulnerable part of the body, such as the knee or elbow, they are subject to irritation and may become quite tender. Plantar warts, which occur on the soles of the feet, become very sensitive because of pressure. Anal warts cause itching. Warts can also block a

nostril or an external acoustic meatus. A wart develops between 1 and 8 months after the virus becomes lodged in the skin. The virus is often spread by scratching, rubbing, and slight razor cuts. In more than half the cases, warts disappear without treatment, but some remain for many years.

**wash**

The usually dry portion of a bed of a stream that contains water only during or after a local rainstorm or heavy snowmelt.

**washerwoman's itch**

A form of dermatitis appearing on the hands, generally consisting of various skin eruptions from fungal infections or contact dermatitis, and due to having one's hands in water a great deal of the time.

**Wassermann test**

A complement-fixation test in the diagnosis of syphilis.

**waste**

(1) Unwanted materials left over from a manufacturing process. (2) Refuse from places of human or animal habitation. (3) Any material determined by the user to no longer serve a useful purpose and will therefore be discarded. (4) Any spent nuclear fuel or radioactive waste isolated in a disposal system. (5) Material subjected to waste treatment or pollution control, or is directly imposed on the environment. (6) The gradual loss, decay, or diminution of bulk. (7) To pine away or dwindle.

**waste and tar oils**

Petroleum-based materials that are worthless for any purpose other than fuel use.

**waste column**

A term used to express pressure, (e.g., inches of water column or inches water gauge).

**waste disposal**

The process or means for getting rid of waste material, such as in an approved landfill.

**waste form**

The materials comprising the radioactive components of waste and any encapsulating or stabilizing matrix.

**waste load allocation**

The maximum load of pollutants each discharger of waste is allowed to release into a

particular waterway. Discharge limits are usually required for each specific water quality criterion being, or expected to be, violated.

**waste treatment plant**

A facility containing a series of tanks, screens, filters, and other processes by which pollutants are removed from water.

**waste treatment stream**

The continuous movement of waste from its generation to treatment to disposal.

**waste stream**

Expected wastes resulting from a specific process.

**wastewater**

The spent or used water from individual homes, a community, a farm, or an industry that contains dissolved or suspended matter.

**wastewater operations and maintenance**

Actions taken after construction to assure that facilities constructed to treat wastewater will be properly operated, maintained, and managed to achieve efficiency levels and prescribed effluent levels in an optimum manner.

**watch**

(1) A period of duty consisting of vigilance and monitoring for possible hazards, normally performed by a qualified individual or group at some location. (2) A statement issued by local authorities, weather/other authorized officials indicating that a specific threat is possible in a certain region within a specified period of time. *See also warning.*

**watch keeping**

The process of maintaining a watch.

**watchmaker's cramp**

(1) An occupational disease consisting of painful contractions of the muscles in the hand. (2) A spasm of the extra-ocular skeletal muscles in or near the orbit due to the containment of a jeweler's lens over the eye utilizing those muscles.

**water**

(1) A clear, colorless, odorless, tasteless liquid, H<sub>2</sub>O. (2) An aqueous solution of a medicinal substance. (3) Amniotic fluid.

**water balance**

*See fluid balance.*

**water course**

A running stream of water. A natural stream fed from permanent or natural sources, including rivers, creeks, runs, and rivulets.

**water curtain**

A means for reducing or preventing the emission of paint during spray painting operations by providing a water flow over a wall located at the rear of a paint spray booth to collect paint overspray.

**water equivalent**

The depth of water that would result from the melting of a snow sample. Typically about 10 inches of snow will melt to 1 inch of water, producing a water equivalent of 10 to 1.

**water gauge**

*See water column.*

**water intake/outflow**

A structure through which water enters or exits a conduit.

**water mode**

Consists of navigable rivers, canals, the Great Lakes, the St. Lawrence Seaway, the Inter-coastal Waterway, ocean shipping channels; ports; commercial ships and barges, fishing vessels, urban ferries, and recreational boats.

**water pollution**

The presence in water of enough harmful or objectionable material to damage the water's quality.

**water pollution abatement equipment**

Equipment used to reduce or eliminate waterborne pollutants, including chlorine, phosphates, acids, bases, hydrocarbons, sewage, and other pollutants. Examples of water pollution abatement structures and equipment include those used to treat thermal pollution; cooling, boiler, and cooling tower blowdown water; coal pile runoff; and fly ash waste water. Water pollution abatement excludes expenditures for treatment of water prior to use at the plant.

**water pollution episode**

A pollution discharge event which has caused an abnormally high concentration of pollutants to enter a navigable waterway to a degree sufficient enough to interfere with or cause harm to the normal ecology of the affected area(s).



*Water pollution episodes can significantly affect the ecology of the local area for many years*

#### **water purification**

The use of a variety of processes to remove or neutralize one or more impurities in water.

#### **water quality criteria**

Specific levels of water quality which, if reached, are expected to render a body of water suitable for its designated use. The criteria are based on specific levels of pollutants that would make the water harmful if used for drinking, swimming, farming, fish production, or industrial processes.

#### **water quality-limited requirements**

The pollution controls the discharger in selected location must apply to ensure their discharges do not cause violation of the water quality standard set for that receiving body.

#### **water quality standards**

State-adopted and EPA-approved ambient standards for water bodies. The standards cover the use of the water body and the water quality criteria which must be met to protect the designated use or uses.

#### **water-reactive**

Describes chemicals, such as sodium or potassium, that react with water to release a gas

that may be flammable and/or may present a health hazard because of the toxic properties of the end product.

#### **water repellent**

Any chemical or other substance applied to clothing or other materials to resist water wetting.

#### **water solubility**

(1) The maximum concentration of a chemical compound which can result when it is dissolved in water. If a substance is water soluble it can very readily disperse through the environment. (2) Maximum concentration of a substance in pure water at a given temperature. For Hazard Ranking System purposes, use the value reported at or near 25°C (77°F).

#### **water supplier**

A person who owns or operates a public water system.

#### **water supply system**

The collection, treatment, storage, and distribution of potable water from source to consumer.

#### **water table**

The upper level of a body of groundwater.

#### **water transportation**

Includes establishments engaged in freight or passenger transportation on the open seas or inland waters, and establishments that provide incidental services such as lighterage, towing, and canal operation. Also includes excursion, sightseeing, water taxis, and cargo handling.

#### **water transportation of freight (not elsewhere classified)**

Establishments primarily engaged in transporting freight on all inland waterways, including the intracoastal waterways on the Atlantic and Gulf coasts.

#### **water transportation of passengers (not elsewhere classified)**

Establishments primarily engaged in furnishing water transportation of passengers, not elsewhere classified, such as airboats (swamp buggy rides), excursion boat operations, and sightseeing boats.

#### **water treatment**

Any type of processing of water to enable it to meet certain standards or desired characteristics, especially including purification for drinking purposes.



**watercourse**

A way or course through which water may or does flow.

**waterfall illusion**

A motion aftereffect in which a stationary background or horizontal lines of graphics or text appear to move in the opposite direction after the individual has viewed scrolling lines on a display.

**waterfront liquid natural gas (LNG) plant**

An LNG plant with docks, wharves, piers, or other structures in, on, or immediately adjacent to the navigable waters of the United States or Puerto Rico and any shore area immediately adjacent to those waters to which vessels may be secured and at which LNG cargo operations may be conducted.

**watering place**

A place other than a spring or well where vessels and vehicles replenish their water supply.

**waterproof**

(1) Impermeable to water. (2) So constructed or protected that exposure to the weather will not interfere with successful operation. Rain-proof, raintight, or watertight equipment can fulfill the requirements for weatherproof where varying weather conditions other than wetness, such as snow, ice, dust, or temperature extremes, are not a factor.

**waters of the United States**

(1) Navigable waters or waterways; waters of the U.S. including those subject to tidal action shoreward to the mean high water mark and are presently used or may be used to transport interstate or foreign transport. (2) The territorial seas; coastal and inland waters, lakes, rivers, and streams that are navigable waters of the United States, including adjacent wetlands; tributaries to navigable waters of the United States, including adjacent wetlands manmade non-tidal drainage and irrigation ditches excavated on dry land are not considered to be tributaries); interstate waters and their tributaries, including adjacent wetlands; all other waters of the United States such as isolated wetlands and lakes, intermittent streams, prairie potholes, and other waters that are not part of a tributary system to interstate waters or to navigable waters of the United States, the degradation or destruction of which could affect interstate commerce. The term

includes a) coastal and inland waters, lakes, rivers and streams that are navigable to the oceans; b) tributaries of navigable waters; and, c) wetlands, including those adjacent to waters of the United States.

**waters under the jurisdiction of the United States**

The territorial sea of the United States, and the waters included within a zone, contiguous to the territorial sea of the United States, of which the inner boundary is a line coterminous with the seaward boundary of each coastal state, and the outer boundary is a line drawn in such a manner that each point on it is 200 nautical miles from the baseline from which the territorial sea is measured.

**watershed**

(1) The area from which a stream or other body of water receives its make-up water. (2) The land area that drains into a stream.

**waterspout**

A column of rotating wind over water that has characteristics of a dust devil or tornado.

**watertight**

So constructed that moisture will not enter the enclosure.

**waterway**

River, canal, lake, or other stretch of water that by natural or manmade features is suitable for navigation.

**watt (W, w)**

A unit of power in the SI/MKS system; equal to the production of energy at the rate of one joule per second.

**watt-second**

*See joule.*

**wave**

(1) A disturbance propagated through a medium such that the value of the disturbance is a function of time and/or position. (2) A gradual increase and subsidence, as a progressing disturbance on the surface of a liquid, the rhythmic variation occurring in the transmission of electromagnetic energy, or the sensation of nausea.

**wave cyclone**

An extratropical cyclone that forms and moves along a front. The circulation of winds

about the cyclone tends to produce a wavelike deformation on the front.

**wave length**

The distance in the line of an advancing wave from any point to a like point on the next wave.

**wave number**

The reciprocal of the wavelength.

**waveform**

A pictorial or graphical representation of a wave.

**wavefront**

A locus of points which act as a continuous surface having the same phase.

**wavelength ( $\lambda$ )**

The distance between one point on a cycle of a periodic waveform and the corresponding point at the same phase of an adjacent cycle of the same wave parallel to the direction of propagation.

**waybill**

The document covering a shipment and showing the forwarding and receiving stations, the name of consignor and consignee, the car initials and number, the routing, the description and weight of the commodity, instructions for special services, the rate, total charges, advances and waybill reference for previous services, and the amount prepaid.

**Wb**

See *weber*.

**WBGT**

See *wet bulb globe temperature index*.

**WBT**

See *wet bulb temperature*.

**weak color**

See *pastel*.

**wear**

That deterioration of a surface due to relative motion between it and another surface.

**wearing apparel**

As generally used in statutes, refers not merely to a person's outer clothing, but covers all articles usually worn, and includes underclothing.

**wear-out phase**

That period of time occurring after a system has performed much of its useful life and components begin to fail due to aging or other factors. See also *life cycle characteristic curve*.

**weather**

The condition of the atmosphere at any particular time and place.

**weather cap**

See *rain cap*.

**weather radar**

Provides the flight crew with visual display of weather that could contain turbulence. The system's primary function is to assist in turbulence avoidance, although most airborne radar systems are also capable of terrain mapping.

**weather types**

Certain weather patterns categorized into similar groups. Used as an aid in weather prediction.

**weatherproof**

*Instrument.* So constructed or protected that exposure to the weather will not interfere with the instrument's operation.

**weaver's cough**

Acute respiratory illness that occurs among weaving mill employees as a result of their exposure to cotton dust.

**weber (Wb)**

The metric unit of flux. The International System unit of magnetic flux.

**Weber-Fechner law**

A psychophysical rule which attempts to describe the relationship between the degree of response or sensation strength of a sense organ to the intensity of the stimulus as a logarithmic function.

$$A = k \log B \text{ where } B = I_s \div I_0$$

where:

$A$  = the magnitude of the sensation

$k$  = Weber ratio

$I_s$  = the stimulus intensity presented

$I_0$  = absolute threshold for that stimulus

**Weber fraction**

See *Weber ratio*.

**Weber ratio**

A measure of the relative discrimination between the just noticeable difference in a

stimulus and the original or another stimulus intensity, equal to the constant in Weber's Law.

$$k = \Delta I_s \div I_s$$

where:

$k$  = Weber ratio

$\Delta I_s$  = just noticeable difference change in stimulus intensity

$I_s$  = original stimulus intensity

#### **Weber test**

A method for determining unilateral hearing loss in which the handle of a vibrating tuning fork is placed against the forehead. A person with normal hearing hears the sound from the midline (equally in both ears); a conductive hearing impaired individual hears the sound coming from the side with the affected ear; a central hearing loss impaired individual hears the sound better in the normal ear.

#### **Weber's law**

A rule which states that the Weber ratio remains constant for a given sensory parameter over the normal sensory range.

#### **weed**

Any plant which grows where not wanted.

#### **week**

A period of seven consecutive days (the starting and ending days may vary according to religious, legal, or other criteria).

#### **weekday**

From 6 a.m. Monday to 5:59 p.m. Friday.

#### **weekend**

(1) From 6 p.m. Friday to 5:59 a.m. Monday.  
(2) The consecutive days within a week during which most workers normally do not work, typically Saturday and Sunday in a standard workweek.

#### **WEEL**

See *workplace environmental exposure level*.

#### **Wegener-Bergeron-Findeisen process**

A meteorological phenomenon. See *ice crystal process*.

#### **weigh facility**

An area having facilities for weighing of trucks by state highway authority.

#### **weight**

(1) A value, based on previous information, which is assigned to some score or variable to

change the outcome of results. (2) See *body weight*. (3) The force with which the mass of a person or object is attracted to the earth or other body, according to Newton's second law.

#### **weight as reported**

An individual's body weight as stated by the individual himself/herself, without instrumental confirmation.

#### **weight density**

See *air density*.

#### **weight-distance tax**

A tax basing the fee per mile on the registered gross weight of the vehicle. Total tax liability is calculated by multiplying this rate times miles traveled.

#### **weight-height tables**

A data matrix providing the average weight and height of individuals in a population at various ages.

#### **weight/measurement ton**

*Shipping*. In many cases, a rate is shown per weight/measurement ton, at the carrier's option. This means that the rate will be assessed on either a weight ton or measurement ton basis, whichever will yield the carrier the greater revenue. For example, the rate may be quoted on the basis of 2,240 pounds or 40 cubic feet or 1 metric ton or 1 cubic meter.

#### **weight of evidence**

(1) *Law-General*. The balance or preponderance of evidence. The inclination of the greater amount of credible evidence, offered in a trial, to support one side of the issue rather than the other. (2) *EPA*. An EPA classification system for characterizing the extent to which the available data indicate that an agent is a human carcinogen.

#### **weight of lift**

A guideline for the maximum number of pounds which an individual could be expected to lift under given circumstances.

#### **weight ton**

There are three types of weight tons: a) the short ton, weighing 2,000 pounds; b) the long ton, weighing 2,240 pounds; and c) the metric ton, weighing 2,204.68 pounds. The last is frequently quoted for cargo being exported from Europe.

**weight velocity**

The rate at which body weight increases during physical maturation.

**weighted mean skin temperature**

A weighted measure using the proportions of the body surface represented by the various body segments such as the arms, trunk, head, etc. which is intended to represent the average temperature of the skin over its total body surface.

**weighting**

*Acoustics.* The prescribed frequency response provided for in a sound-level meter.

**weighting network**

Electrical networks (A, B, C) that are incorporated into sound-level meters. The C network provides a flat response over the frequency range of 20 to 10,000 Hz while the B and A networks selectively discriminate against lower frequency sounds.

**weightlessness**

A condition in which no gravitational or other accelerating force can be consciously detected by the observer, and in which an individual or object may remain suspended indefinitely in air, subject only to air movement and other forces.

**weir**

A dam in a waterway over which water flows and that serves to raise the water level or to direct or regulate flow. *See also low water dam.*

**welder's flash**

Eye effect (i.e., inflammation of the cornea) resulting from exposure to the UV radiation associated with arc welding. Also referred to as flashburn.

**welding fumes**

Fumes generated during metal arc welding, oxyacetylene welding, or other welding procedures where iron, mild steel, or aluminum are joined. It is measured as total particulate in the breathing zone of the welder. OSHA recommends determining welding fume exposure by sampling inside the welding mask.

**well**

(1) A bored, drilled, or driven shaft, or a dug hole, whose depth is greater than the largest surface dimension and whose purpose is to

reach undergroundwater supplies or oil, or to store or bury fluids below ground. (2) With regard to ladders, a permanent complete enclosure around a fixed ladder, which is attached to the walls of the well. Proper clearances for a well will give the person who must climb the ladder the same protection as a cage. *See also cage.*

**well area**

An area identified as a danger to maritime navigation containing one or more wells.

**well injection**

The subsurface emplacement of fluids in a well.

**well plug**

A water-tight, gas-tight seal installed in a bore hole or well to prevent movement of fluids.

**wellhead unit value**

The wellhead sales price, including charges for natural gas plant liquids subsequently removed from the gas; gathering and compression charges; and state production, severance, and/or similar charges.

**Western Rivers**

Generally, the Mississippi River system but technically the Mississippi River system above the Huey P. Long Bridge, the Red River to the north, the Port Allen-Morgan City Waterway, and that part of the Atchafalaya River above its junction with the Port Allen-Morgan City Waterway.

**wet-bulb depression**

The difference between the temperature of the dry-bulb and the wet-bulb thermometers of a psychrometer.

**wet-bulb globe temperature (WBGT)**

A measure of heat stress represented by the synthesis of three weighted variable: the dry bulb temperature, the wet bulb temperature, and the radiant temperature according to the following relationship. *See heat stress index.*

$$WBGT = 0.7 WBT + 0.1 DBT + 0.2 GT$$

where:

*WBT* = wet-bulb temperature

*DBT* = dry-bulb temperature

*GT* = globe temperature

**wet-bulb globe temperature (WBGT) index**

An index of the heat stress in humans when work is performed in hot environments.

**wet-bulb temperature (WBT)**

That temperature obtained with an air current passing a calibrated liquid thermometer whose bulb is enclosed by a wet gauze; that temperature obtained from the instrumentation equivalent. May also be referred to as *psychrometric wet-bulb temperature* or *natural wet-bulb temperature*.

**wet-bulb temperature index**

A measure of heat stress based on the wet-bulb temperature and the precautions which should be taken for various ranges of readings.

**wet gas**

A gas that contains water vapor or a gas that has not been dehydrated.

**wet-globe temperature (WGT)**

The temperature determined using a wetted black globe thermometer, such as the Botsball device.

**wet ice**

Frozen water.

**wet Kata thermometer**

A measure of heat stress obtained by a device similar to a wet-bulb thermometer, having a silk sleeve along the length of an alcohol-filled tube and graduations marked only at 95° and 100°F, which is used to measure the rate of cooling in hot environments and determining the relaxation allowance required under those conditions.

**wet location**

See *location*.

**wet scrubber**

An air pollution control device used to remove particulates and fumes from air by entraining the pollutants in a water spray.

**wet steam**

Steam containing water droplets.

**wet strength**

A measure of the tensile strength of a material when saturated with water.

**wet suit**

A diving suit, usually made of neoprene material, designed to provide thermal insulation for a diver's body.



*Recreational diver in wet suit*

**wet-test meter**

A secondary calibration device that can be used to determine the flow rate of a sampling pump.

**wetlands**

An area that is regularly saturated by surface or groundwater and subsequently is characterized by a prevalence of vegetation that is adapted for life in saturated soil conditions. Examples include swamps, bogs, fens, marshes, and estuaries.

**wetting agent**

A surface-active agent which, when added to water, causes it to penetrate more easily into, or to spread over the surface of another material by reducing the surface tension of the water.

**wg**

Water gauge.

**WGT**

See *wet-globe temperature*.

**wharf**

(1) A general term for any structure at which vessels berth or tie-up. The term is also used specifically for a berthing structure of open piling construction, aligned parallel with the shoreline, and referred to as a marginal wharf.  
(2) A landing place where vessels may tie up for loading and unloading of cargo.

**wharf demurrage**

Charge assessed against cargo remaining in or on terminal facilities after the expiration of free time, unless arrangements have been made for storage.

**wharfage**

Charge assessed by a pier or dock owner against freight handled over the pier or dock or against a steamship company using the pier or dock. *See also berth and dockage.*

**what-you-see-is-what-you-get (WYSIWYG)**

A display in which the hardcopy is expected to be as the display appears.

**Wheatstone stereoscope**

*See mirror stereoscope.*

**wheelbase**

The distance from the centerline of the front axle to the centerline of the rear axle.

**wheelchair**

A mobility aid belonging to any class of three or four wheeled devices, usable indoors, designed for and used by individuals with mobility impairments, whether operated manually or powered. A *common wheelchair* is such a device which does not exceed 30 inches in width and 48 inches in length measured two inches above the ground, and does not weigh more than 600 pounds when occupied.



*Common wheelchair*

**wheelchair accessible vehicle**

A vehicle that a wheelchair-bound person may enter either a) via an on-board retractable lift or ramp or b) directly from a station platform reached by an elevator or a ramp that is either level with the vehicle floor or can be raised to floor level.

**wheezing**

Breathing with a rasp or whistling sound. It results from constriction or obstruction of the throat, pharynx, trachea, or bronchi. Wheezing is commonly a symptom of asthma. In an asthmatic attack, spasm of the bronchi occurs,

and air can be forced only with difficulty in breathing, and frequently the lips have a bluish color and the veins in the neck are distended. When wheezing is persistent and is not asthmatic, the cause may be an obstruction, such as a foreign body or tumor, somewhere in the breathing passages.

**when halfway over**

*Maritime Navigation. Communication Protocol.* Channel report term used in crossings meaning when halfway across the river, put head of tow on the next mark listed in the channel report.

**when well over**

*Maritime Navigation. Communication Protocol.* Channel report term used in describing courses steered in crossings when more than halfway across or halfway over the reach.

**whiplash**

A rapid, severe neck hyperextension followed by a rapid hyperflexion from a posterior impulse imparted to the body below the neck level (can result in spine, spinal cord, neck, jaw, or brain injury).

**Whipple disc**

A microscopic eyepiece with an inscribed grid that defines a specific area. Used in counting dust samples to determine the particle concentration.

**whirlwind**

*See dust devil.*

**whisker**

A short-term growth of facial hair on the sides of the face and/or near the chin.

**whisper**

A manner of speaking very softly, involving the transmission of speech sounds produced by the passage of air through the glottis without vibrating the vocal cords.

**whistle blower**

Usually employees or agents of an organization who report suspected criminal conduct by others within the organization to an outside regulatory agency (external) or to upper level management within an organization (internal). One of the seven due diligence steps of an effective compliance program includes reference to a reporting system to which employees and other agents can report suspected criminal conduct by others within the organi-



zation “without fear of retribution.” *See also effective compliance program and methods of self-reporting.*

**white**

(1) Pertaining to a broad spectrum of some energy form, consisting of approximately equal intensity levels across the frequency band or spectrum. *See also white noise.* (2) An appropriate mixture of frequencies and/or wavelengths of the electromagnetic spectrum within the visual range which is perceived by the eye as the achromatic color white.

**white blood cell**

*See leukocyte.*

**white collar**

Pertaining to that type of work usually done by management or office personnel, as opposed to factory or production line work.

**white damp**

Carbon monoxide.

**white finger**

*See Raynaud's syndrome.* Also called *vibration white finger.*

**white lung**

Term used to indicate the effect of asbestos on the lungs.

**white muscle**

Skeletal (striated) muscle tissue having a pale appearance in the fresh or living state, with more myofibrils and less sarcoplasm and myoglobin than red muscle, and which exhibits short latency and rapid response to stimulation. Also called *white muscle.*

**white noise**

A noise that is uniform in power-per-hertz-bandwidth over a very wide frequency range. *See also broadband noise.*

**white point**

*See achromatic point.*

**white sound**

*See white noise.*

**whitener**

*See brightener.*

**whitening agent**

*See brightener.*

**whiteout**

An atmospheric condition, found most frequently in the arctic region, where the horizon

is non-discernable, objects do not cast shadows, and only nearby dark objects are visible.

**WHO**

World Health Organization.

**whole body**

Pertaining to the entire body as a unit, usually in terms of some effects on the body.

**whole body irradiation**

Pertains to the case in which the entire body is exposed to the incident electromagnetic energy or in which the cross-section of the body is smaller than the cross-section of the incident radiation beam.

**whole learning**

A learning situation in which all of the material to be learned is presented and processed as a single unit. *See also part learning.*

**whooping cough**

An infectious disease characterized by coryza, bronchitis, and violent attacks of coughing. Although it may attack at any age, most cases occur in children under 10, and half of these are in children under 5. Also called *Pertussis.*

**wicket**

A rectangular heavily constructed slab of wood and steel hinged in a counterbalanced way so as to be lying flat on the riverbed when down, and held upright by the pressure of the water when raised. Wickets are placed in a parallel line across a river. When all are in raised position, they form a wall or dam, thus backing up the water and raising it to the pool level.

**wide band**

Containing a broad spectrum of frequencies.

**wide band analysis**

A type of frequency analysis in which intensity level measurements are made over an octave or third octave.

**wide out**

*Maritime Navigation.* Communication Protocol. A channel report term meaning not quite as far as the middle but well out in the channel.

**wide reef**

An illusion caused by the wind blowing upstream against the current. There is generally a deep trench under the ripples caused by the wind.

**wide spread**

Trailer axles which are more than 8 feet apart.

**width**

That distance representing the side-to-side dimension of an object.

**Wilcoxon matched-pairs signed-ranks test**

A non-parametric statistical test using the rankings of different magnitudes between related samples.

**wild value**

See *outlier*.

**wildlife refuge**

An area designated for the protection of wild animals, within which hunting and fishing are either prohibited or strictly controlled.

**willful**

Proceeding from a conscious motion of the will; voluntary; knowingly; deliberate.

**willful and malicious injury**

For such to exist, there must be an intent to commit a wrong either through actual malice or from which malice will be implied. Such an injury does not necessarily involve hatred or ill will as a state of mind, but arises from intentional wrong committed without just cause or excuse.

**willful and wanton misconduct**

Conduct which is committed with an intentional or reckless disregard for the safety of others or with an intentional disregard of a duty necessary to the safety of another's property. Failure to exercise ordinary care to prevent injury to a person who is actually known to be or reasonably expected to be within the range of a dangerous act being done.

**willful and wanton negligence**

Failure to exercise ordinary care to prevent injury to a person who is actually known to be, or reasonably is expected to be, within the range of a known danger.

**willful misconduct**

The deliberate non-compliance with rules or regulations.

**willful misconduct of employee**

Under workers' compensation acts, precluding compensation, means more than mere negligence, and contemplates the intentional doing of something with the knowledge that it is likely to result in serious injuries, or with

reckless disregard of its probable consequences.

**willful tort**

Implies intent or purpose to injure.

**willful violation**

A violation of an OSHA requirement that is known to exist by the employer and is allowed to continue without regard to employee safety and/or health. As defined by case law, it is a violation resulting from intentional disregard or plain indifference to the Act and its regulations. Specifically, it is the employer's intent to disregard a regulation, rather than their rationalization or motive, which is relevant in determining willfulness. Employer knowledge of a standard which is being violated, rather than mere knowledge of a hazardous condition, is the essential difference between a willful violation and a serious violation. In essence, a willful violation is an intentional, deliberate, and knowing violation of the law.

**willful violation citation**

A citation issued if an employer committed an intentional and knowing violation of the OSHA Act or when the employer was aware that a hazardous condition existed and did not make a reasonable effort to eliminate the condition. See also *willful violation*.

**winch rig**

Straight truck or tractor with a hoist.

**wind**

Air in motion relative to the earth's surface.

**wind blast**

The effect of the exposure of a person or object to air when either the air or the person/object is moving.

**wind chill**

The sensation of an effective reduction in air temperature due to wind velocity and water vaporization.

**wind chill factor**

The cooling effect of any combination of temperature and wind, expressed as the loss of body heat. Also called *wind-chill index*.

**wind chill temperature (WCT)**

An equivalent ambient temperature value for body cooling which would be experienced if there were no wind.

**wind cone**

See *wind sock*.

**wind direction**

The direction from which the wind is blowing.

**wind indicator**

A visual device used to provide wind information.

**wind machines**

Fans placed in orchards for the purpose of mixing cold surface air with warmer air above.

**wind noise**

That noise due to airflow around, through, or otherwise in relation to a vehicle or other object.

**wind rose**

A diagram that shows the percent of time that the wind blows from different directions at a given location over a given time.

**wind shear**

The rate of change of wind speed or wind direction over a given distance.

**wind sock**

A tapered fabric shaped like a cone that indicates wind direction by pointing away from the wind. Also called a *wind cone*.

**wind vane**

An instrument used to indicate wind direction.

**wind waves**

Water waves that form due to the flow of air over the water's surface.

**windbox**

A chamber below a furnace grate or burner, through which air is supplied for combusting the fuel.

**windbreak**

A shelter, either natural (e.g., a line of trees or a thick hedge) or artificial (a screen), which breaks or interrupts the force of the wind.

**windbreaker**

A light garment for covering the torso to maintain body heat by protecting the body from minor wind chill effects or other environmental conditions which cause only a slight degree of thermal discomfort due to cold.

**window**

(1) A rectangular, or approximately rectangular, independent display structure or partition serving a specific function. (2) A restricted or selected portion of a dataset or time period. (3) Any structure containing a transparent material through which light may enter a structure or an observer may see outside a structure.

**window jack scaffold**

A scaffold, the platform of which is supported by a bracket or jack which projects through a window opening.

**windpipe**

See *trachea*.

**windward**

Upwind.

**wingboard**

A 12-by 36-inch daymark formerly used with type 46 wooden structures. Wingboards are now being replaced by passing daymarks.

**wingdam**

A rock and sand dike extending from the right or left bank of the river outward toward the channel. Often lies just below the surface of the water at pool stage. Wingdams are used to direct the flow of water into the main channel to assist in its maintenance.

**winglet (tip fin)**

An out-of-plane surface extending from a lifting surface. The surface may or may not have control surfaces.

**wink**

(1) A time division equal to 1/200 or 0.0005 minute or about 0.03 second. (2) The brief conscious closing of one eyelid.

**wink counter**

A clock which is designed to have a face with 100 graduations and two hands, the small one of which revolves twice each minute, the large 20 times per minute.

**winter solstice**

Approximately December 22 in the Northern Hemisphere when the sun is lowest in the sky and directly overhead at latitude 23°S, the Tropic of Capricorn.

**wipe test**

The collection of chemical, mineralogical, or radiological stressors from a surface onto a

media, such as filter paper. A typical wipe area is 100 square centimeters. Wipe test results are useful indices of contamination, but not direct estimators of exposure risk.

**wire-frame**

A model or image which displays only the edges, corners, and connecting structures of an object.

**wires**

*Maritime.* Short lengths of wire rope of varying sizes used to couple up the many barges within a tow. They are usually of standard length to span the distance from one timberhead to another on the barges and are used with ratchets. Named as follows: tow wire, backing wire, face wire, stem wire, scissor wire, lashing.

**wireways**

A sheet-metal structure with hinged or removable covers for housing and protecting electric wires and cable and in which conductors are laid in place after the wireway has been installed as a complete system.

**with average**

A marine insurance term meaning that a shipment is protected for partial damage whenever the damage exceeds a stated percentage.

**witness**

Any person who has first-hand knowledge of some fact related, directly or indirectly, to an accident or incident.

**Witness Protection Act**

Federal law which establishes the manner in which the Attorney General may provide for the relocation and other protection of a witness or a potential witness for the federal government or for a state government in an official proceeding concerning an organized criminal activity or other serious offense.

**wk**

Week.

**W/kg**

Watts per kilogram.

**WL**

See *working level*.

**WLM**

See *working level month*.

**wood-burning stove pollution**

Air pollution caused by emissions of particulate matter, carbon monoxide, total suspended particulates, and polycyclic organic matter from wood-burning stoves.

**wood characteristics**

Distinguishing features which, by their extent and number, determine the quality of a piece of wood.

**wood hull**

Hulls of plywood, molded plywood, molded planking, or any other wood fiber in its natural consistency including those of wooden construction that have been "sheathed" with fiberglass or sheet metal.

**wood irregularities**

Natural characteristics in or on wood that may lower its durability, strength, or utility.

**wood residues**

Includes, but is not limited to, logging slash, down timber material, woody plants, and standing live or dead trees which do not meet utilization standards because of size, species, merchantable volume, or economic selection criteria and which, in the case of live trees, are surplus to growing stock needs.

**wooden barrel**

A packaging made of natural wood, of round cross-section, having convex walls, consisting of staves and heads and fitted with hoops.

**wool**

A natural fiber, normally obtained from sheep.

**wool sorter's disease**

Pulmonary anthrax.

**word processing**

The use of a computer for text processing, and possibly including some simple graphics, within a range of user-specified formats.

**word processor**

Any software application which performs word processing functions.

**word recognition**

A capability in which an artificial system can compare the auditory signal generated by certain words and respond if a particular match is found. Also known as *discrete word recognition* and *isolated word recognition*.

**word wrap**

The automated displacement of a word at the end of a line of text to begin the following line of text when that word would extend the original line beyond set margins.

**work**

(1) The scalar product of the force and distance through which an object is moved. (2) The physical, physiological, and/or mental effort expended in performing a task. (3) Any task or activity which is considered occupational, not recreational or activities of daily living, which occurs at an appropriate workplace, has at least a somewhat structured environment, and for which one hopes to be or is typically compensated, either monetarily or through trade.

**work aid**

Any device, system, data, and/or information which enables or enhances worker performance in the work environment.

**work area**

A specified area within a workplace where an individual or individuals perform assigned work.

**work barge**

A barge equipped with aids-to-navigation material pushed ahead of the tender and containing storage space for lumber, sinkers, buoys, an aids-to-navigation workshop, and a boom for hoisting buoys on board.

**work content**

That physical labor performed in carrying out tasks, plus the rest and relaxation permitted to recover from fatigue.

$$WC = \text{basic time} + \text{relaxation allowance} + \text{additional work allowance}$$

**work curve**

A graphical, longitudinal record of the mental and/or physical work output of an individual or group within a series of specified units of time.

**work cycle**

One complete period, including all work elements used within that period, of any repetitive pattern process, or operation required to complete a job or task.

**work cycle time**

That period of time required or used to complete one work cycle.

**work design**

The structuring of the complete working environment, including personnel, workstation, and workplace layouts, equipment, supplies, procedures, and all their interrelationships. *See also job design.*

**work distribution chart**

A chart illustrating all indirect worker activities to be carried out by a work unit and the individuals responsible for carrying out those activities.

**work efficiency**

The relative work output for a given amount of energy used.

**work element**

*See therblig.*

**work environment**

The physical location, equipment, materials processed or used, and the kinds of operations performed in the course of an employee's work, whether on or off the employer's premise, comprise the employee's work environment.

**work equipment**

(1) *General.* The complete set of tools, machinery, jigs, and other devices available for use by a worker in a given work environment. (2) *Rail Operations.* Equipment which can be coupled in a train for movement over the carrier's tracks, and which is used in the carrier's work service. Includes such equipment as ballast cars, business cars, company cars, derrick cars, ditching cars, outfit cars, pile drivers, snow dozers, tool cars, wrecking cars, and others.

**Work Factor®**

A predetermined motion time system.

**work flow chart**

Any symbolic flow chart illustrating how work is to be performed.

**work history**

A historical representation of the various jobs and locations/areas where an individual worked over a working lifetime.

**work humanization**

The process of making jobs more easily performed, ideally with greater efficiency and less effort. Usually by the application of human factors techniques.

**work injury**

See *occupational injury*.

**work level**

The elevated platform of a scaffold, used for supporting workers and their materials, comprising the necessary vertical, horizontal, and diagonal braces, guardrails, and ladder for access to work platform.

**work measurement**

(1) The use of any of a variety of methodologies to determine how much time is required by a qualified worker to produce a certain output in a specified job. See also *time study*, *time and motion study*, and *activity sampling*.  
(2) See *physiological work measurement*.

**work metabolism**

The physiological energy consumption in excess of resting metabolism attributed to the performance of a specific task.

**work pace**

The rate at which a task or activity is done, whether externally or self-paced.

**work permit**

A document issued by an authorized person permitting specific work to be done during a specified period of time in a defined manner.

**work physiology**

A sub-discipline of ergonomics which addresses the effects of work on physiologic function, such as the assessment of the capacity to perform physical work, as well as the effects of fatigue on work performance.

**work practice controls**

Methods used to prevent the release of a substance or physical agent in order to reduce the likelihood for exposure to it or contact with it. They prohibit certain actions by identifying specific ways to carry out a task and to follow good personal hygiene practices. These can be applied to situations where there is potential exposure via inhalation, skin contact, or skin absorption, as well as for exposures to physical agents (e.g., ionizing radiation, noise, heat stress, etc.).

**work product privilege**

This privilege protects documents and tangible things prepared in anticipation of litigation by or for another party or by or for that party's representative.

**work psychology**

The study or consideration of the cognitive or mental aspects of the work environment.

**work related**

Any event, exposure, activity, etc. occurring within the work environment resulting in death, injury, or illness to an employee is generally considered to be work related, regardless who was responsible or at fault.

**work-related occurrence**

If the injury or illness occurs on the employer's premises, OSHA will deem the event work related. This means that OSHA will presume the injury or illness is work related, thereby placing the burden of proving the contrary on the employer.

**work-rest cycle**

A single sequence of a repetitive set involving activity followed by rest; a single sequence of a repetitive set involving heavy physical activity followed by lighter activity and/or rest.

**work-rest ratio**

The ratio of activity time to non-activity time in a work-rest cycle; the ratio of heavy physical activity to lighter activity and rest in a work-rest cycle.

**work simplification**

The planned improvement of the work environment with the goal of enabling workers to produce more with greater efficiency and less effort.

**work specification**

Some form of written documentation which provides details of job procedures, the duties and responsibilities of the person executing the job, the workplace layout, and the tools and equipment to be used.

**work standardization**

The process of setting up uniform working environments across workers or groups in terms of tools and equipment used, procedures, and any other factors affecting performance.



**work standards method**

The use of standard times, output, and related measures in management's evaluation of a worker.

**work strain**

The physiological response reaction of the body to the application of work stress. Not always harmful or traumatic, it can be marked by an increased heart rate and localized strain on body parts, such as the wrists.

**work stress**

In biomechanics, the action of any external force acting on a body during the performance of work. Its end product is *work strain*.

**work study**

The use of any motion and time study techniques to systematically analyze work methods and procedures dealing with those factors involving efficiency and economy. Normally used with the intent of optimizing the use of all resources in a given task.

**work surface**

Any surface or plane which represents the principle area within which motion occurs at the workplace, which supports the tools required for a worker to perform his/her job, and for which illumination intensity and other environmental variables are generally specified.

**work system**

An integrated group of one or more machines and/or workers for coordinated activities in the output of some product or service.

**work task**

A specific job function or set of responsibilities assigned to one or more workers.

**work tolerance**

*Ergonomics.* Condition in which a worker performs at an acceptable rate ergonomically, experiencing both physiological and emotional well-being.

**work train**

Work trains are nonrevenue trains used for the administration and upkeep service of the railroad. Examples are official trains; inspection trains; special trains running with company fire apparatus to save the railroad's property from destruction; trains that transport the railroad's employees to and from work when no transportation charge is made; construction

and upkeep trains run in connection with maintenance and improvement work; and material and supply trains run in connection with operations.

**work unit**

(1) A group of workers who function as a team or group. (2) Any unitary amount of quantifiable work output.

**workability**

A test battery for measuring quantitatively the residual capabilities of individuals with physical disabilities.

**workday**

The distribution and/or number of hours at work during a single 24-hour period.

**worker**

(1) *General.* One who performs work. Usually an employed person, but not necessarily. (2) *Rail Operations.* Any railroad employee assigned to inspect, test, repair, or service railroad rolling equipment, or their components, including brake systems. Members of train and yard crews are excluded except when assigned such work on railroad rolling equipment that is not part of the train or yard movement they have been called to operate (or been assigned to as "utility employees"). Utility employees assigned to and functioning as temporary members of a specific train or yard crew (subject to the conditions set forth in 49 CFR 218.22) are excluded only when so assigned and functioning.

**worker accommodation**

A job design aspect which considers the capabilities of the worker and the demands on him/her in a given job (may include job aids, platforms, chairs, tools).

**worker right-to-know**

See *Hazard Communication Standard*.

**worker-type flow process chart**

A flow process chart which indicates what an employee normally does or is expected to do during some process.

**Workers' Compensation Acts**

State and federal statutes which provide for fixed awards to employees or their dependents in case of employment-related accidents and diseases, dispensing with the need by the employee to bring legal action and prove negligence on the part of the employer. Some of

the statutes go beyond the simple determination of the right to compensation, and provide insurance systems, either under state supervision or otherwise. The various state acts vary as to the extent of workers and employment covered, amount and duration of benefits, etc. The effect of most workers' compensation acts is to make the employer strictly liable to an employee for injuries sustained by the employee which arise out of and in the course of employment, without regard to the negligence of the employer or that of the employee. Where the statute applies, it has been uniformly held that this remedy is exclusive and bars any common-law remedy which the employee may have had, the compensation scheduled under the act being the sole measure of damage.

#### **workers' compensation insurance**

A type of protection purchased by employers to cover payments to employees who are injured in accidents arising out of and in the course of their employment. This insurance system is required by state law and is financed by employers.

#### **working alone**

The performance of any work by an individual who is out of audio or visual range of another individual for more than a few minutes at a time.

#### **working area**

That region of the workplace within which a worker moves about in the course of performing his/her normal tasks.

#### **working face**

As pertains to solid waste: That portion of the land disposal site where solid wastes are discharged and are spread and compacted prior to the placement of cover material.

#### **working level (WL)**

A unit of measure for documenting exposure to radon decay products (daughters) in one liter of air that will result in the ultimate emission of alpha particles with a total energy of  $1.3 \text{ E}+5\text{MeV}$ . One working level is equal to approximately 200 picocuries per liter.

#### **working level month (WLM)**

A unit of measure used to determine cumulative exposure to radon. An exposure to one working level for 170 hours.

#### **working load**

The load imposed by workers, materials, and equipment on scaffold platforms.

#### **working memory**

An intermediate duration, generally of seconds to minutes, form of memory which is transferred or encoded from sensory memory and capable of manipulation. Also called *short-term memory*.

#### **working standard**

A solution prepared by volumetric dilution of a stock or intermediate solution and used directly to calibrate an instrument or to determine instrument response.

#### **working triangle**

The concept that the stove, refrigerator, and sink make up three corners of a triangle in the kitchen and that the sum of the triangle legs should be within certain limits for the greatest efficiency/productivity.

#### **workload**

An indicator of the level of total mental and/or physical effort required to carry out one or more tasks at a specific performance level.

#### **workpiece hazards**

The capacity for injury to occur from handling the item being worked or from incidental processing of that piece such as flying chips, sparks, hot metal, etc.

#### **workplace**

An establishment or worksite at a fixed location that has within its bounds one or more work areas.

#### **workplace design**

The process of developing a workplace, including accommodations and locations for machines, worker(s), tools, and other devices. *See also* [workplace layout](#), *motion efficiency principals*, and *prerequisites of biomechanical work tolerances*.

#### **workplace environmental exposure level (WEEL)**

Exposure guides developed by the WEEL Committee of the AIHA for agents which have no current exposure guidelines by other organizations. The WEELs represent time-weighted average workplace exposure levels to which, it is believed, nearly all employees could be repeatedly exposed without adverse effect.

**workplace fit test**

A respirator fit test procedure which is conducted at the workplace of the individual being provided the respiratory protective device.

**workplace health hazard**

Any material, physical agent, biological organism, or ergonomic stress for which there is evidence that acute or chronic health effects may result from exposure to it.

**workplace layout**

The description and/or physical arrangement of the workplace, including provisions for worker(s), materials, furniture, tools, equipment, movement, maintenance, the external environment, and any necessary interactions for performing a certain task or job. *See also workplace design.*

**workplace protection factor (WPF)**

A measure of the actual protection provided by a respirator in a given workplace under the actual conditions present by a properly functioning respirator when correctly worn and used. It is the ratio of the measured time-weighted average concentration of the contaminant taken simultaneously inside and outside the respirator facepiece.

**worksample test**

A brief examination given to a prospective employee to determine his/her mastery of the skill(s) required for a particular job.

**worksite**

A single physical location where business is conducted or operations are performed by the employees of an employer.

**workstation**

A single location within a workplace at which instrumentation or equipment is located and at which a worker might remain for extended periods of time to perform control, monitoring, processing, or other functions.

**workweek**

The number of days or the pattern of days a worker is expected to perform at the workplace within a calendar week.

**world aeronautical charts (WAC)**

Provide a standard series of aeronautical charts covering land areas of the world at a size and scale convenient for navigation by moderate speed aircraft. Topographic information includes cities and towns, principal

roads, railroads, distinctive landmarks, drainage, and relief. Aeronautical information includes visual and radio aids to navigation, airports, airways, restricted areas, obstructions, and other pertinent data.

**world wide web (www)**

Part of the Internet. Computers are set up as Web servers, and Web pages (and their related files) are stored on the servers.

**worm**

A small, slender, elongated, soft-bodied animal, often found as a parasite in man and other animals. The most common parasitic worms in North America are roundworms and tapeworms. (Note: Ringworm is not caused by a worm, it is a fungus infection of the skin.)

**worry**

A state of anxiety due to a feared or expected outcome from some anticipated event.

**worst case discharge**

Under the Federal Water Pollution Control Act: (1) In the case of a vessel, a discharge in adverse weather conditions of its entire cargo. (2) In the case of an offshore facility or onshore facility, the largest foreseeable discharge in adverse weather conditions. This volume will be determined by each pipeline operator for each response zone and is calculated according to 49 CFR 194.105.

**worsted**

A fabric made from long combed wool fibers.

**worth**

The lowest product cost which will consistently perform the required function.

**wound**

A loss of tissue or the interruption of normal anatomical relationships due to mechanical injury. Typically due to weapons as opposed to machinery or tools.

**WPF**

*See workplace protection factor.*

**wraparound grasp**

A technique for gripping where an object is held against the palm with all four fingers wrapped around it and the thumb overlays the index finger.

**wreck**

A wrecked vessel, either submerged or visible, which is attached to or foul of the bottom or cast up on the shore.

**wreckage**

An area identified as a danger to maritime navigation containing the ruined remains of one or more vessels.

**wrecker**

A truck designed for hoisting and towing disabled vehicles.

**wrist**

(1) The collection of carpal bones and other tissues which form the junction of the forearm and the hand. There are eight carpal bones in the wrist, arranged in two rows. The joint surfaces of these bones glide upon each other in four directions. The carpals join the bones of the forearm, the radius and ulna, and the bones of the hands, the metacarpals. The bones are bound together and protected by tough ligaments and capsules, the enveloping structures. The major arteries, nerves, veins, and tendons that serve the hand and fingers run across the wrist. Both tendons and the joint are lined with synovial membrane. (2) That structure on a robotic or teleoperator arm which serves as analogous function to the human wrist, permitting flexion, extension, and rotation.

**wrist breadth**

The linear distance perpendicular to the forearm longitudinal axis between the radial and ulnar styloid prominence of the wrist. Measured with the flesh compressed and hand digits extended.

**wrist circumference, distal**

The surface distance around the wrist just distal to the styloid processes of the radius and ulna and proximal to the hand. Measured with minimal tissue compression and the musculature of the arm and hand relaxed.

**wrist circumference, styloid level**

The surface distance around the wrist at the level of the tip of the styloid process of the radius. Measured with minimal tissue compression and the arm and hand musculature relaxed.

**wrist-finger speed**

The ability to make rapid, simple, repetitive movements of the fingers, hand(s), and wrist(s), with little concern for accuracy and eye-hand coordination aspects.

**wrist height**

The vertical distance from the floor or other reference surface to stylium. Measured with the individual standing erect and the arm hanging naturally at the side.

**wristdrop**

Paralysis of the extensor muscles of the hand and fingers, mainly due to metallic poisoning.

**wristwatch study**

A cumulative timing study using a standard wristwatch.

**written standard practice**

An outline of the methods for a worker to use in some operation, often also including the tools and equipment used and a workplace layout diagram. May be in hardcopy or digital form.

**written verbal comprehension**

The ability to understand written language.

**written verbal expression**

The ability to put words or concepts into written language for communication purposes.

**wrong**

A violation of the legal rights of another.

**wrongdoer**

One who commits an injury; a tortfeasor. The term ordinarily imports an invasion of the right to the damage of the party who suffers such an invasion.

**wrongful**

Injurious, heedless, unjust, reckless, unfair. It implies the infringement of some right, and may result from disobedience to lawful authority.

**wrongful death action**

A type of lawsuit brought on behalf of a deceased person's beneficiaries that alleges that death was attributable to the willful or negligent act of another.

**wrongful discharge**

An at-will employee's cause of action against his/her employer, alleging that the discharge was in violation of state or federal anti-discrimination statutes, public policy, an implied employment contract, or an implied covenant of good faith and fair dealing.

**WRUA**

Federal Wood Residue Utilization Act of 1980.

**Wt**

Weight.

**w/v**

Weight per volume.

**WWT**

Wastewater treatment.

**www**

See *world wide web*.

**wye**

As applied to street railway, a track with two branches, one joining the main track from one direction and the other joining the main track from the other direction

# X

## **x axis**

(1) The horizontal axis having a left-to-right extent on a two- or three-dimensional graph in the rectangular coordinate system. (2) The horizontal axis having a forward-to-back extent in a vehicular coordinate system. *See also y axis and x axis.*

## **x-radiation**

Highly penetrating radiation similar to gamma-radiation. However, unlike gamma rays, x-rays are not generated from the nucleus of the atom but from the surrounding electrons. They are produced by electron bombardment of a metal target in a vacuum tube. X-rays are electromagnetic radiation at wavelengths shorter than those of visible light (usually 0.05 to 5 angstroms).

## **x-ray diffraction (XDIF or XDF)**

An analytical method for identifying and quantifying crystalline materials by determining the diffraction pattern (diffraction beams and intensity) emitted by a material when exposed to x-rays.

## **x-ray fluorescence (XF or XRF)**

An analytical method for identifying and quantifying the elements present in solids and liquids by examining the x-rays emitted (pattern and intensity) as a result of the absorption of radiation from some source (x-ray, isotope). This methodology is rarely used for analysis of gases.

## **x-ray tube**

An electron tube which is designed for the conversion of electrical energy into x-ray energy.

## **xanthoma**

A tumor-like deposit of fatty substances in the skin. The color of a xanthoma is usually yellow, but may be brown, reddish, or cream. Xanthomas are usually harmless. They range in size from tiny pinheads to large nodules, and the shape may be round, flat, or irregular. They are often found around the eyes, the joints, the neck or the palms, or over the tendons. Often, these fatty deposits are not limited to the skin, but are found throughout the body in bones, the heart, blood vessels, liver,

and other organs. The formation of xanthomas may indicate an underlying disease, usually related to abnormal metabolism of lipids, including cholesterol. Abnormally high levels of blood lipids may be found in diabetes mellitus (xanthoma diabetorum), in diseases of the liver, kidney, and thyroid gland, and in several hereditary metabolic diseases. The excessive lipids carried in the blood may then be deposited as xanthomas.

## **xanthomatosis**

An accumulation of excess lipids in the body due to disturbance of lipid metabolism and marked by the formation of fatty tumors in various parts and sometimes by profound effects on bodily health.

## **xanthosis**

Yellowish discoloration.

## **XDIF**

*See x-ray diffraction.* Also referred to as *XRD*.

## **xenobiotic**

Term for non-naturally occurring manmade substances found in the environment (i.e., synthetic material solvents, plastics).

## **xenon**

A chemical element, atomic number 54, atomic weight 131.30, symbol Xe.

## **xeroderma**

Dry and often rough skin.

## **xerophytes**

Drought-resistant vegetation.

## **XF**

*See x-ray fluorescence.* Also referred to as *XRF*.

## **xiphoid process**

The most inferior segment of the sternum.

## **xiphoiditis**

Inflammation of the xiphoid process.

## **XRD**

*See x-ray diffraction.* Also referred to as *XDIF*.

## **XRF**

*See x-ray fluorescence.* Also referred to as *XF*.

## **X-Y controller**

Any device having the ability to control a cursor in the screen X and Y dimensions.



**xylene**

A compound used as a cleaning solvent.

**xyleneol**

Any of a series of colorless crystalline substances resembling phenol.

**X-Y plotter**

A computer-driven graphics printing device which plots two-dimensional figures.

**X-Y-Z controller**

Any device having the ability to control a cursor in the screen X and Y dimensions while also producing apparent movement in the Z dimension.

# Y

## y

Year.

### y axis

(1) The vertical axis on a two- or three- dimensional graph in the rectangular coordinate system. (2) The horizontal axis having a left-to-right extent in a vehicular coordinate system. *See also x axis and z axis.*

### yard

(1) *Measurement.* A space occupying 36 inches. (2) *Rail Operations.* a) A system of auxiliary tracks used exclusively for the classification of passenger or freight cars according to commodity or destination; assembling of cars for train movement; storage of cars; or repair of equipment. b) A system of tracks within defined limits, whether or not part of a terminal, designed for switching services, over which movements not authorized by time table or by train order may be made, subject to prescribed signals, rules, and requirements.

### yard caboose

A caboose that is used exclusively in a single yard area.

### yard crew

*See train or yard crew.*

### yard locomotive

A locomotive that is operated only to perform switching functions within a single yard area.

### yard mule

Small tractor used to move semitrailers around the terminal yard.

### yard switching train mile

Computed at the rate of 6 mph for the time actually engaged in yard switching service if actual mileage is not known.

### yard switching trains

Those trains operated primarily within yards for the purpose of switching other equipment. Examples include the making up or breaking up of trains, service industrial tracks within yard limits, storing or classifying cars, and other similar operations. Switching performed by a road crew that is incidental to the road operation is not included.

### yard track

A system of tracks within defined limits used for the making up or breaking up of trains, for the storing of cars, and for other related purposes, over which movements not authorized by timetable, or by train order may be made subject to prescribed signals, rules, or other special instructions. Sidings used exclusively as passing track and main line track within yard limits are not included in the term yard track.

### yard tractor

A truck tractor used exclusively to move trailers around a motor or trailer yard. It is not used for over the road travel.

### yardbird

*Transit (slang).* A driver who connects and disconnects tractor and semitrailer combinations and moves vehicles around the terminal yard. *See also spotter.*

### yaw

(1) A rotation or oscillation about the vertical (z) axis. (2) The raspberry-like excrescence of yaws. *See also yaws.*

### yaw axis

The vertical axis through an aircraft, spacecraft, ship, or other vehicle capable of motion in three dimensions about which it may yaw. Also called *z axis* and *yawing axis*.

### yawing moment

A torque or force which tends to cause yaw.

### yawl

A small oar-propelled open boat or skiff carried aboard a towboat for use as a utility boat. *See also skiff.*

### yawl play

The use of a yawl to row lines or personnel between boat and bank.

### yaws

A highly infectious disease caused by the spirochete *Treponema pertenue*. Although practically non-existent in the United States and other developed countries, yaws may be common among people who live under primitive conditions in equatorial Africa, South America, and the East and West Indies. Yaws is transmitted by direct contact. The first symptom, appearing usually about a month after exposure, is a single papule, an inflammatory but painless elevation of the skin. The

papule soon ulcerates. Open, oozing sores appear a few weeks later on the hands, feet, face, scalp, and trunk. Eventually, after several years, the disease causes tissue destruction, bone changes, and shortening of the fingers or toes, in a cycle that has a resemblance to leprosy and is sometimes mistaken for it.

**yd**

Yard

**yd<sup>2</sup>**

Square yard.

**yd<sup>3</sup>**

Cubic yard.

**year of construction**

The year the structure was originally completed or the year any part of the structure was first occupied. For mobile homes, year of construction is the model year.

**year of construction of vessel**

The year of original construction of the hull.

**yeast**

Term applied to the unicellular, nucleated microorganisms that reproduce by budding and to other organisms that exist usually or predominantly in similar form. Some are used in production of various foodstuffs and beverages, and some are pathogenic for man.

**yellow**

(1) The color produced by stimulation by light waves of wavelengths of 571.5 to 578.5 m $\mu$ .

(2) A dye or stain that produces a yellow color.

**yellow fever**

An acute, dangerous, often fatal infectious disease of warm climates, transmitted by the bite of a mosquito of the genus *Aedes*. Characterized by jaundice, vomiting, hemorrhages, and, of course, fever. Yellow fever is less rampant today largely because of vaccination and better control of the mosquito menace, but it is still a danger in most tropical countries and those travelling to such locations must take proper precautions. Among native inhabitants who contract the disease, there is a mortality rate of less than 5 percent. In visitors from other climates, fatalities once ran as high as 40 percent, but they are now much lower. With proper immunization precautions, a visitor from a temperate country today takes only a minimal risk. Yellow fever has

an incubation period of 3 to 6 days. It then manifests itself suddenly and intensely with fever, headache, muscular aches, and prostration. A few days later, the temperature suddenly falls, only to rise again. The pulse is originally very rapid, but then slows gradually to less than 50 beats per minute. In addition to the characteristic yellowing of the skin, the urine becomes darker. There may be frequent vomiting, and blood may become noticeable in the vomitus (so-called black vomit). There may also be bleeding from the mucous membranes. The disease runs its course in a little more than a week. Those who survive (and the great majority do) suffer no permanent damage. The jaundice completely disappears. Furthermore, these persons are immune from a second attack. In fatal cases, death is usually due to liver or kidney failure.

**yellow marrow**

A yellowish-colored marrow consisting of fat cells and a small amount of blood cells.

**yellow spot**

See *macula lutea*.

**yes-no design**

An experimental design, used for testing thresholds, in which a subject is required to state whether (yes) or not(no) he/she believes a stimulus was presented during a given trial.

**yield**

To give up something, or to let something pass before another.

**yield strength**

The stress at which a material exhibits a specified permanent deformation or set.

**yogurt**

A cheese-like preparation from milk, used as a food.

**yoke**

(1) *General*. A connecting structure. A depression or ridge connecting two structures.

(2) *Aviation*. The term used to describe the primary device the pilot uses to control the movements of an aircraft during flight. Also called the "stick," and although somewhat inaccurate, the "wheel."

**yolk**

The material of an egg or ovum that serves as food for the developing organism until it obtains nourishment in some other way.

**Young-Helmholtz theory**

A theory of vision which proposed that the eye contains three types of receptors: one sensitive primarily to red, one primarily to green, and one primarily to blue-violet. Also called the three-component theory.

**Young's modulus**

The ratio of tension to strain in a material within the elastic range for that material.

**Young's rule**

The dose of a drug for a child is obtained by multiplying the adult dose by the child's age in years and dividing the result by the sum of the child's age plus 12.

**yr**

Year (also *y*).

**ytterbium**

A chemical element, atomic number 70, atomic weight 173.04, symbol Yb.

**yttrium**

A chemical element, atomic number 39, atomic weight 88.905, symbol Y.

# Z

## z

Symbol for atomic number.

## Z

See *electrical impedance*.

## z axis

(1) The horizontal axis having the extent of depth and perpendicular to the x and y axes in the rectangular coordinate system. See also *x axis* and *y axis*. (2) The vertical axis in a vehicular system. See also *yaw axis*.

## z score

See *standard score*.

## ZD

See *zero discharge*.

## zebra mussel

Freshwater mollusk that can foul water intake screens and piping by attaching itself to a solid structure, eventually restricting flow.

## zein

A soft yellow protein from maize.

## zeismus

A skin disease, said to be due to excessive diet of maize.

## Zeitgeber

See *entraining agent*.

## zeolite

Minerals or synthetic resins that have ion exchange capabilities.

## zeolite softening

Water softening process using a zeolite resin bed to accomplish ion exchange.

## zephyr haul

A shipment of light weight cargo.

## zero

The point on a thermometer scale from which the degrees are numbered. The zero of the Celsius (centigrade) and Réaumur thermometers is the freezing point of water; on the Fahrenheit thermometer zero it is 32 degrees below the freezing point of water.

## zero air

Air containing no components other than those present in pure air.

## zero crossing

The transition of a time-varying signal through the baseline level, or zero amplitude.

## zero defects

The concept of perfect product quality, without any flaws.

## zero discharge (ZD)

A facility that discharges no material to the environment.

## zero drift

*Instrument.* The change in instrument output over a stated period of unadjusted continuous operation when the input concentration is zero. Drift in the zero indication of an instrument without any change in the input variable (i.e., contaminant).

## zero-emission vehicle

A clean fuel vehicle meeting even more stringent zero-emission vehicle standards.

## zero fault tolerant

Having no redundancy. Pertaining to a condition in which a single fault in a system will cause that system or the function performed by it to fail.

## zero gravity

See *microgravity*.

## zero level

See *threshold of audibility*.

## zero liquid discharge (ZLD)

A facility that discharges no liquid effluent to the environment.

## zero ODP

Zero ozone depletion potential.

## zero-order control

See *position control*.

## zero-order reaction

A reaction in which the rate of change is independent of the concentration of the reactant.

## zeta potential

The voltage differential between the surface of the diffuse layer surrounding a colloidal particle and the bulk liquid beyond.

## ZID

See *zone of initial dilution*.

## zinc

A chemical element, atomic number 30, atomic weight 65.37, symbol Zn.

**zinc chills**

See *metal fume fever*.

**zinc oxide**

A fine, amorphous, white or yellowish white powder, used as an astringent and protectant.

**zinc protoporphyrin (ZPP)**

See *porphyrin*.

**zip drive**

*Computing.* A drive that stores up to 100MB of data on a single Zip diskette.

**zipper**

A fastener for clothing that interlaces two separated strips of material.

**zirconium**

A chemical element. atomic number 40, atomic weight 91.22, symbol Zr.

**ZLD**

See *zero liquid discharge*.

**zonal analysis**

A relatively new system safety analysis technique concerned with evaluating the geographic arrangement of installed systems, and its interconnections, as well as the influence of external events on those systems.

**zonal wind**

A wind that has a predominate west-to-east component.

**zone**

(1) A partitioned area of a display used for some specific purpose or function. (2) A girdle or belt. (3) A restricted area.

**zone charge**

An extra fee charged for crossing a predetermined boundary.

**zone of employment**

Area within which injuries to employees are compensable under workers' compensation acts; it is the place of employment and the area thereabout (including the means of ingress and egress) under the control of the employer. It implies reasonable proximity to the place of employment.

**zone of incorporation**

The depth to which soil on a land farm is lowed or tilled to receive wastes.

**zone of initial dilution (ZID)**

The part of a lake or river where a discharge from an outfall first mixes with the receiving waters.

**zone of saturation**

The portion of the earth's crust below the water table where the pores are filled with water at greater than atmospheric pressure.

**zoning**

The designation of certain sections of land for specific types of uses, usually within a city having a land use plan.

**zooglea**

A gelatinous matrix developed by growing bacteria associated with trickling filter beds and activated sludge floc.

**zoology**

The study of animals.

**zoom**

To transform a portion of the field of view into a close-up image, either on a display or with a camera lens system.

**zoonosis**

An infection or infectious disease transmissible under natural conditions between vertebrate animals and humans. In many cases, transmission of foodborne pathogens occurs indirectly from food animals or animal products.

**zooplankton**

Tiny aquatic animals eaten by fish. They possess little or no means of propulsion.

**zootoxin**

A toxin produced by higher animals, especially snakes, scorpions, and spiders, which is usually a mixture of hemotoxin and neurotoxin.

**ZPG**

Zero population growth.

**zygoma**

See *zygomatic bone*.

**zygomatic arch**

The projecting bony arch forming the most lateral portion of the face which extends horizontally along the side of the head, from beneath the eye orbit to near otobasion superior, and generally including parts of both the zygomatic bone and the temporal bone.

**zygomatic bone**

A lateral facial bone forming part of the orbit. Synonymous with *cheekbone* and *zygoma*.



**zygote**

A cell that is produced by the joining of two sex or germ cells (gametes).

**zymoid**

Any poison from decaying tissue.

**zymosan**

A mixture of the lips, polysaccharides, proteins, and ash derived from the cell walls of the entire cell of yeast.